

# Fossilium Catalogus

## II: Plantae.

Editus a

W. Jongmans.

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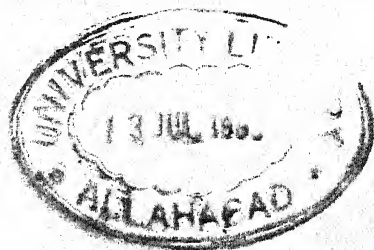
Pars 17:

W. N. Edwards

Dicotyledones (Ligna).



W. Junk  
Berlin W. 15  
1931.



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## Introduction.

No general review of the literature of structurally preserved dicotyledonous woods has appeared since 1890, when Kaiser listed, with very few omissions, the species described up to that date. The present catalogue, although a slight departure from the strictly systematic treatment of dicotyledonous families in the Fossilium Catalogus, may therefore be of use to workers in this field.

The genera and species of woods are arranged in alphabetical order, and a systematic index under families is given at the end. The bibliographic references are set out as in Fossilium Catalogus, Pars 14, Sapindaceae. When two or more papers by the same author have been published in one year, they are distinguished by the addition of letters thus; 1870, 1870a, 1870b.

Synonyms, nomina nuda, rejected names, and misidentifications are enclosed in square brackets, and full synonyms usually appear only under what is regarded as the correct, or the best established name. Cross-references are always given.

In general, records of woods in Pleistocene and Holocene deposits have only been included when there is discussion or illustration of the internal structure.

In some instances it has been possible to include in the remarks an indication of the whereabouts of the type material, but in the time at my disposal I have been unable to confirm all such references, nor to extend enquiries to cases where the original authors are silent on this matter.

**NOMENCLATURE.** Form-genera of fossil woods are usually made by adding the termination **-oxylon** to the name of the recent genus or family to which the wood is presumed to belong. Many of the older names, and especially Unger's, have the termination **-inium**, and several of these, such as **Quercinium**, are well-established and in general use. Others, such as **Betulinium**, have by certain authors been replaced by names like **Betuloxylon**. This seems to me quite unnecessary, and although there is a strong case for not submitting form-genera strictly to the rules of priority, I see no reason for giving up all the older generic names ending in **-inium**. As a matter of mere convenience, it may be pointed out that to substitute names ending in **-oxylon** for names ending in **-inium** would involve far more changes than the opposite course of retaining the older form-genera. Gothan argues that the **-oxylon** ending at once indicates the nature of the fossil, but so also, and perhaps more exclusively, does the **-inium** ending. It might happen that one wished to propose a form-genus for woods presumed to belong to the **Erythroxylaceae**, or the genera **Haematoxylon** or **Sideroxylon**, and the **-inium** termination would in such cases be much more appropriate.

Pleistocene and Holocene woods, the great majority of which certainly belong to living genera, and probably to living species, should be recorded under recent generic names. Nothing is gained by calling a Pleistocene elm wood **Ulmoxylon** rather than **Ulmus** sp., and to iden-

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tify a comparatively recent willow-like wood with *Salicinoxylon mio-cenicum*, as Fietz has done (1926), may cause confusion and is to be deprecated. The facts of the case are sufficiently, and indeed more clearly, indicated by recording such wood as *Salix* ? sp., as Fietz himself did in a similar case (1926a). Many of the geologically older woods may of course also belong to recent genera, but the element of uncertainty is greater.

Caspary's use of recent generic names for fossil woods which were often of uncertain generic position cannot be defended; his arguments concerning the nomenclature of fossil woods have been effectively criticized by Felix (1894), who was also able to show that a wood described by Caspary as *Schinus* was much more probably a member of the *Rhamnaceae*, and therefore was more appropriately to be termed *Rhamnacinium*.

For other nomenclatorial vagaries see the remarks below on *Alnoxyylon*, *Betulinium priscum*, *Betulinium* sp., *Fraxinus excelsior*, *Plataninum* sp., and *Salicinium antiquum*.

There are numerous dicotyledonous woods which cannot at present be placed even in families. The situation is, in fact, much as it was when Brongniart wrote in 1822. He proposed the name *Exogenites* for dicotyledonous woods in general, but this name is open to objection, and especially because dicotyledons, or exogens, included in those days such diverse groups as conifers, cycads, and some lycopods. I therefore suggest that Schleiden's name *Dryoxylon*, expressly founded for the wood of broad-leaved trees (*Laubhölzer*) should be revived as a useful form-genus for dicotyledonous woods of uncertain position.

The practise of instituting entirely new genera (such as *Bronnites*, *Petzholdia*), started by Unger, has unfortunately continued to the present day (e. g. *Aulacoxylon*, *Sumatroxylon*). I have transferred a few of Unger's genera to *Dryoxylon*, when his name was pre-occupied by a living plant, but, failing a re-examination of the types, it does not seem worth while to rename the mass of species inadequately described and figured by Unger. All species of the following genera (very few of which have been figured at all) must be regarded as unidentifiable unless Unger's slides can be found and examined: *Brongniartites*, *Bronnites*, *Cottaites*, *Fichtelites*, *Fraasia*, *Klippsteinia*, *Meyenites*, *Mirbellites*, *Mohlites*, *Petzholdia*, *Piccolominites*, *Pritchardia*, *Rosthornia*, *Schleidenites*, *Sillimannia*, *Tchihatcheffites*, and *Withamia*. The following species of Unger's are also not figured and inadequately described: *Juglandinium mediterraneum*, *Laurinium guatemalense*, *L. xyloides*, *Rhodium juglandinum*, and *Salicinium populinum*.

Other genera of uncertain affinities (not always adequately described) which might well have been included in *Dryoxylon* are: *Aachenoxylon*, *Cantia*, *Hythia*, *Jugloxylon*, *Palackya*, *Pataloxylon*, *Populocaulis*, *Sabulia*, *Sjögrenia*, *Stephanoxylon*, *Suevioxylon*, *Sumatroxylon*, *Trochodendromagnolia*, and *Zittelia*. It is very doubtful whether the multiplication of such names serves any useful purpose, and if it is really necessary to name unidentified dicotyledons I would strongly urge the use of the designation *Dryoxylon*.

**IDENTIFICATION.** The possibility of identifying fossil dicotyledonous woods depends on the state of our knowledge of recent woody structure. A few references to works dealing with recent woods have been included in the bibliography. Solereder (1899, 1908) is the principal source of information on the anatomy of dicotyledonous families. For European woods see Muller (1888), Tetzlaff (1881), Chalk & Rendle (1929). For Eastern Asiatic woods see Foxworthy (1907, 1909), Kanehira (1921, 1921a), Moll & Janssonius (1906). Other useful works are Hopkinson (1912), Houlbert (1893), Moeller (1876), Stone (1904, 1921), and Wilhelm (1903). Nordlinger's "Holzquerschnitte" (1852) should also be mentioned, and also two sets of photographs of wood sections: James

Weale's Microphotographs of Woods, of which there are 1200 or more, and R. B. Hough's American Woods, of which 14 parts have appeared between 1888 and 1928, dealing with 350 woods.

For discussions of the problems connected with the identification of fossil dicotyledonous woods see among others Bailey (1924), Felix (1888a), Kräusel (1922), and Moll & Janssonius (1912).

**METHODS OF PREPARATION** and treatment of lignite, brown coal, charcoal, and so on are described by Bauer (1927), Fietz (1926, 1926a), Wittmack & Buchwald (1902).

**PETRIFICATION AND MODES OF OCCURRENCE.** The following papers may be mentioned: Barron (1905), Becke (1912), Chhibber (1928), Donath (1928), Johnson (1876), Kuntze (1895), Schweinfurth (1882), Stokes (1837) and Udluft (1926). The whole question of how plants become petrified is reviewed by St. John (1927), who gives numerous references to the earlier literature.

**GEOGRAPHICAL DISTRIBUTION AND AGE.** The systematic index under families is followed by a geographical index showing the distribution of described fossil woods. Numerous brief records of the occurrence of 'fossil wood' or 'dicotyledonous wood' without any further particulars, are scattered through the geological literature; they have been omitted from this catalogue.

The great majority of the species listed are of Tertiary age, the exact horizon being frequently uncertain. It may be convenient, however, to give a list of those woods which have been ascribed to earlier formations (excluding some doubtful records):

Jurassic *Suevioxylon*.

Aptian: *Aptiana*, *Cantia*, *Dipterocarpoxyton porosum*, *Hythia*, *Sabulia*.

Albian: *Laurinium albiense*.

Cenomanian: *Hamamelidoxylon renaulti*, *Salicinium biradiatum*.

Senonian: *Carpinoxylon compactum*, *Cornoxyton myricaeforme*, *C. vateri*, *Fegonium dryandraeforme*, *F. schenki*, *Juglandinium longiradiatum*, *Laurinium brunsvicense*, *Plataninium subaffine*, *Salicinium varians*, *Taenioxylon* sp.

Upper Cretaceous: *Aachenoxylon*, *Caesalpinioxylon oweni*, *Dryoxylon americanum*, *Euonyminium auerbachii*, *Fegonium hokkaidense*, *Jugloxylon*, *Laurinium antiquum*, *L. haasi*, *L. uniseriatum*, *Nicola aegyptiaca*, *N. moresneti*, *Nothofagoxylon scalariforme*, *Paraphyllanthoxylon*, *Populocaulis*, *Rhoidium ungeri*, *Rohlfisia*, *Sabiocaulis*, *Saururopsis*, *Sillimannia*.

The horizons given in the catalogue are usually as stated by the original authors, or as corrected by subsequent authors on the same subject. Many of them are doubtless capable of revision or of more accurate statement.

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**Achenoxylon** Hovelacque, 1890, p. 60.

**Achenoxylon multident** (Smets).

1888 *Achenosaurus multident* Smets, pars. [Not seen].

1890 *Achenoxylon* sp.: Hovelacque, p. 60, pl. III, f. 1; text-fig. 1.

Remarks: Originally described as the dermal spine of a reptile, but shown to be a dicotyledon by its internal structure. Affinities uncertain. Another supposed part of "*Achenosaurus*" was described by Hovelacque as *Nicolia moresneti*.

Occurrence: Upper Cretaceous; Belgium (Moresnet).

**Acacioxylon** Schenk, 1883, p. 9.

**Acacioxylon antiquum** Schenk.

1883 *Acacioxylon antiquum* Schenk, p. 9.

1888 *Acacioxylon antiquum* Schenk: Fliche, p. 571.

1890 *Acacioxylon antiquum* Schenk: Kaiser, p. 31.

1893 *Acacioxylon antiquum* Schenk: Thomas, p. 3.

Occurrence: Lower Oligocene (Gebel Ahmar beds); Libyan Desert (Wadi Dugla).

Tertiary; Tunisia (Ain Cherichira).

**Acacioxylon tenax** Felix.

1893 *Acacioxylon tenax* Felix, p. 49, pl. III, f. 4, 6—8.

Occurrence: ? Tertiary; Mexico.

**Acacioxylon vegae** Schenk.

1888 *Acacioxylon vegae* Schenk, p. 23.

Remarks: Closely related to *A. antiquum* Schenk.

Occurrence: Lower Oligocene?; Egypt.

**Acer** L.

(See also *Acerinium*.)

**Acer** sp.

1914 *Acer* sp.: Szafer, p. 349.

1926a *Acer*: Fietz, p. 419.

Occurrence: Pleistocene; Poland.

Prehistoric (Loess); Czechoslovakia (Brno).

***Acerinium* Unger, 1842, p. 101.**

***Acerinium aegyptiacum* Schenk.**

1888 *Acerinium aegyptiacum* Schenk, p. 22.

1890 *Acerinium aegyptiacum* Schenk: Schenk, p. 900, f. 431.

Occurrence: Tertiary; Egypt (eastern desert, between Cairo and Suez).

***Acerinium astianum* Pampaloni.**

1904 *Acerinium astianum* Pampaloni, p. 544, f. 7—9.

Occurrence: Tertiary; Piedmont (Astigiano alto).

***Acerinium borussicum* (Caspary).**

1888 *Acer borussicum* Caspary, p. 38.

1889 *Acer borussicum* Caspary: Caspary, p. 7, pl. II, f. 1—6.

1890 *Acer borussicum* Caspary: Kaiser, p. 27.

Remarks: Original in Mus. Bot. Gart., Königsberg. Pax (1901, p.

77) gives reasons for doubting whether this wood belongs to *Acer*.

Occurrence: ? Tertiary; East Prussia.

***Acerinium danubiale* Unger.**

1842 *Acerinium danubiale* Unger, p. 101.

1842a *Acerinium danubiale* Unger: Unger, p. 175.

1842b *Acerinium „danubiense”* Unger: Unger, p. 748.

1845 *Acerinium danubiale* Unger: Unger, p. 237.

1847 *Acerinium danubiale* Unger: Unger, p. 136, pl. XLIV, f. 9—11.

1850 *Acerinium danubiale* Unger: Unger, p. 453.

1890 *Acerinium danubiale* Unger: Kaiser, p. 27.

Occurrence: Tertiary; Upper Austria.

***Acerinium terrae-coeruleae* (Caspary).**

1888 *Acer terrae-coeruleae* Caspary, p. 38.

1889 *Acer terrae-coeruleae* Caspary: Caspary, p. 11, pl. II, f. 7, 8; III, f. 1—7; IV, f. 1—12.

1890 *Acer terrae-coeruleae* Caspary: Kaiser, p. 27.

Remarks: Original in Mus. Bot. Gart., Königsberg. Pax (1901,

p. 77) gives reasons for doubting whether this wood belongs to *Acer*.

Occurrence: Oligocene; Prussia (Palmnicken).

***Alnoxylon* Felix, 1884, p. 10.**

(Including *Rhizoalnoxylon* Conwentz).

***Alnoxylon inclusum* (Conwentz).**

1880 *Rhizoalnoxylon inclusum* Conwentz, p. 38, pl. VII, f. 25—28.

1890 *Rhizoalnoxylon inclusum* Conwentz: Kaiser, p. 9.

Remarks: The use of the prefix *Rhizo-* for root woods, introduced by Conwentz for this and other genera (chiefly conifers), only increases nomenclatorial confusion and has not been generally adopted. Felix (1884, p. 11) points out the difficulties of this usage. These roots were found in a cupressineous rootstock.

Occurrence: Tertiary; Silesia (Karlsdorf).

Fossilium Catalogus II. 17.

**Alnoxyton vasculosum Felix.**1884 *Alnoxyton vasculosum* Felix, p. 10, pl. I, f. 1.1889 *Alnoxyton vasculosum* Felix: Staub, p. 187.1890 *Alnoxyton vasculosum* Felix: Kaiser, p. 10.Remarks: Originals in Mus. Ungar. Geol. Reichsanst. Felix rightly substitutes *Alnoxyton* for *Rhizoalnoxyton* Conwentz.

Occurrence: Tertiary (Pannonischer Schichten); Hungary (Gyepüfűzes).

**Alnoxyton yezoëense Reiss.**1907 *Alnoxyton yezoëense* Reiss, p. 194, pl. I, f. 9, 10.

Occurrence: Miocene; Japan (Ishikari).

**Alnoxyton sp.**1902 *Alnus* sp.: Pampaloni, p. 29, pl. I, f. 5.Remarks: Considered by Pampaloni to be an example of the *Betulaceae*, and probably of the genus *Alnus*.

Occurrence: Eocene; Italy (Impruneta nr. Florence).

**Alnus L.****Alnus sp.**1882 *Alnus* sp.: Conwentz, p. 146.1914 *Alnus* sp.: Szafer, p. 349.

Occurrence: Pleistocene; Holstein (Büsum), Poland.

**[Ambaroxylon Houlbert, 1910, p. 74].**Synonym of *Liquidambaroxylon*, q. v.**Ampeloxylon Fliche, 1899, p. 321.****Ampeloxylon ampelopsoides (Schönfeld).**1930 *Vitoxylon ampelopsoides* Schönfeld, p. 112, f. 1—9.Remarks: According to the author, this wood agrees most closely with the recent genus *Ampelopsis* among the *Vitaceae*. Fliche's form-genus *Ampeloxylon* has priority over *Vitoxylon* Schuster.

Occurrence: Miocene; "Deckgebirge der miozänen Braunkohle des Lettengrabens in der hohen Rhön."

**Ampeloxylon cineritarum Fliche.**1899 *Ampeloxylon cineritarum* Fliche, p. 321.Remarks: Leaves of *Vitis* have been recorded by Saporta from the same locality.

Occurrence: Pliocene; Cantal.

**Ampeloxylon coheni (Schuster).**1911 *Vitoxylon coheni* Schuster, p. 541, pl. XX.

Remarks: Fliche's generic name has priority.

Occurrence: Lower Eocene; Greifswalder Oie near Rügen.

**Anacardioxylon** Felix, 1882, p. 70.

**Anacardioxylon magniporosum** Platen.

1908 *Anacardioxylon magniporosum* Platen, p. 57.

Occurrence: Tertiary; California.

[*Anacardioxylon mollii* Kräusel.]

Synonym of *Sumatroxylon mollii*, q. v.

**Anacardioxylon spondiaeforme** Felix.

1882 *Anacardioxylon spondiaeforme* Felix, p. 70.

1883a *Anacardioxylon spondiaeforme* Felix: Felix, p. 16, pl. II, f. 7, 9.

1890 *Anacardioxylon spondiaeforme* Felix: Kaiser, p. 25.

Remarks: Similar to *Spondias lutea*. Originals in Munich.

Occurrence: Tertiary; Antigua.

**Anacardioxylon uniradiatum** Felix.

1894 *Anacardioxylon uniradiatum* Felix, p. 92, pl. VIII, f. 1a—e.

Remarks: Compared with *Spondias lutea*, but also with some *Simarubaceae*.

Occurrence: Eocene (Sumgait series); Caucasus (Apscheron).

**Anomaloxylon** Felix, 1887, p. 527 (non Gothan, 1910).

Remarks: Quite apart from the question of priority, Gothan's coniferous genus *Anomaloxylon* (Gothan, 1910, p. 11) cannot be regarded as well founded. The abnormal condition of the wood rays, which was the principal character of the genus, might be due to disease or wounding.

Gothan's species *A. magnoradiatum* was renamed *Protocedroxylon magnoradiatum* by Eckhold (Jahrb. Pr. Geol. Land., XLII, p. 491), which can hardly be correct if, as Gothan says, the ray cells do not show abietinean pitting. On another page of the same paper (p. 501) Eckhold puts the species, with a query, in his genus *Protocupressinoxylon*, and on p. 493 he gives both names. For the present, the latter might be used.

**Anomaloxylon vicentinum** Felix.

1887 *Anomaloxylon vicentinum* Felix, p. 527, pl. XXV, f. 8.

1890 *Anomaloxylon vicentinum* Felix: Kaiser, p. 38.

Remarks: A liane which, on grounds of certain anomalous structure of the wood, Felix separated from his form-genus *Helictoxylon*. Originals in Mus. Univ. Breslau.

Occurrence: Tertiary; Italy (Monte Grumi near Castelgomberto).

**Aptiana** Stopes, 1912, p. 84.

**Aptiana radiata** Stopes.

1912 *Aptiana radiata* Stopes, p. 84, pl. VI, f. 1, 3—5; VII, f. 6; VIII, f. 10, 11; text-fig. 1—5.

1912 *Aptiana radiata* Stopes: Moll & Janssonius, p. 622.

1915 *Aptiana radiata* Stopes: Stopes, p. 284, text-fig. 87—92.

1924 *Aptiana radiata* Stopes: Bailey, p. 448.

Remarks: Compared by Stopes with various members of the *Caprifoliaceae*, *Magnoliaceae*, *Aquifoliaceae* and *Cyrillaceae*. Moll & Jansonius concluded that it belonged to the *Ternstroemiaceae*, and was very close to the living *Eurya acuminata*. Stopes (1915) did not entirely agree with this. Bailey suggested a comparison with *Vaccinium*. Originals in Geol. Dept., Brit. Mus. (Nat. Hist.). Also figured Scott, D. H. 1924. *Extinct Plants*, p. 55, f. 7.

Occurrence: Lower Cretaceous (Aptian); England (Isle of Wight).

### **Aralinium** Platen, 1908, p. 59.

#### **Aralinium excellens** Platen.

1908 *Aralinium excellens* Platen, p. 59.

Occurrence: Mio-Pliocene; California.

#### **Aralinium lindgreni** Platen.

1908 *Aralinium lindgreni* Platen, p. 64.

Occurrence: Mio-Pliocene; California.

#### **Aralinium multiradiatum** Platen.

1908 *Aralinium multiradiatum* Platen, p. 63.

Occurrence: Mio-Pliocene; California.

#### **Aralinium parenchymaticum** Platen.

1908 *Aralinium parenchymaticum* Platen, p. 62.

Occurrence: Mio-Pliocene; California.

### [**Aulacoxylon** Combes, 1907, p. 28.]

#### [**Aulacoxylon sparnacense** Combes.]

1907 *Aulacoxylon sparnacense* Combes, p. 28, pl. I, f. 1—3.

Remarks: Neither the figures nor the very brief description give any idea of the structure of this wood, which is absolutely unidentifiable. The author does not even seem to have cut thin sections.

Occurrence: Eocene (Sparnacian); France (Auteuil).

### **Banksia** L.

#### **Banksia** sp.

1875 *Banksia* (fossil wood): Johnston, p. 53, f. 10—13.

1888 *Banksia* (fossil wood): Johnston, pp. 270—271, pl. XLVIII, f. 8—11.

Remarks: Johnston states that the wood shows "the original structure very perfectly, and can hardly be distinguished from the sections of existing woods of the same class". The illustrations are poor and rather diagrammatic.

Occurrence: Tertiary; Tasmania (Launceston basin).

### **Banksioxylon** Crié.

#### [**Banksioxylon australe** Crié.]

1889 *Banksioxylon australe* Crié, p. 78.

Remarks: Nomen nudum.

Occurrence: Pleistocene; Australia.

[**Banksioxylon tasmanicum** Crié.]

1889 **Banksioxylon tasmanicum** Crié, pp. 90, 91.

Remarks: Nomen nudum.

Occurrence: Pliocene; Tasmania.

**Betula** L.

(See also **Betulinium**.)

[**Betula macclintockii** Cramer.]

Synonym of **Betulinium macclintockii**, q. v.

[**Betula salzhauseensis** Goeppert.]

See **Betulinium** sp.

**Betula** sp.

1914 **Betula** sp.: Szafer, p. 348.

1926 **Betuloxylon oligocenicum** Kaiser: Fietz, p. 229.

Remarks: Fietz's record is based on a Quaternary lignite, which he claims is identical in structure with recent *Betula* wood. It is therefore difficult to understand why he uses Kaiser's name; it would seem better to describe this Silesian lignite simply as *Betula* sp., and not to confuse it with an Oligocene wood which may be specifically distinct. (See also the remarks on nomenclature in the Introduction, above.) Fietz himself is inconsistent in his terminology, for in the same paper he refers another Quaternary lignite to a living species (*Viscum album*).

Occurrence: Pleistocene; Poland, Silesia (Sörgsdorf).

**Betulinium** Unger, 1842, p. 101.

[**Betulinium diluviale** (Unger) Felix.]

Synonym of **Laurinium diluviale**, q. v.

See also **Betulinium** sp.

**Betulinium geinitzii** (Lakowitz) Nagel.

1890 **Betuloxylon geinitzii** Lakowitz, p. 25, pl. I, f. 1—4.

1916 **Betulinium geinitzii** (Lakowitz) Nagel, p. 104.

Occurrence: Oligocene; Saxony (Annaberg).

**Betulinium lignitum** (Kraus) Nagel.

1865 **Betula lignitum** Kraus, p. 48.

1890 **Betula lignitum** Kraus: Kaiser, p. 7.

1916 **Betulinium lignitum** (Kraus) Nagel, p. 104.

Remarks: The wood described by Schenk (1869) and Beck (1882, 1886) as *Betula salzhauseensis*, or *Betulinium* sp. (q. v.) should perhaps be included here. Kraus was of opinion that the birch woods of the Brown Coal could not be specifically distinguished.

Occurrence: Oligocene; Bavaria (Rückers, Bischofsheim, Salzhause).

**Betulinium macclintockii** (Cramer) Schimper.

1868 *Betula macclintockii* Cramer, p. 174, pl. XXXIV, f. 4; XXXIX, f. 1—9.

1872 *Betulinium macclintockii* (Cramer) Schimper, p. 575.

1882 *Betulinium macclintockii* (Cramer): Felix, p. 39.

1887 *Betula macclintockii* Cramer: Kobbe, p. 53.

1890 *Betuloxylon macclintockii* (Cramer) Lakowitz, p. 29.

1890 *Betula macclintockii* Cramer: Kaiser, p. 7.

1907 *Betulinium macclintockii* (Cramer): Reiss, p. 199.

1916 *Betulinium macclintockii* (Cramer): Nagel, p. 104.

Occurrence: Tertiary; Banksland (Ballast Bay), Japan.

**Betulinium oligocaenicum** (Kaiser) Nagel.

1880a *Betuloxylon oligocaenicum* Kaiser, p. 511.

1890 *Betuloxylon oligocaenicum* Kaiser: Kaiser, p. 7.

1890 *Betuloxylon oligocaenicum* Kaiser: Lakowitz, p. 29.

1916 *Betulinium oligocaenicum* (Kaiser) Nagel, p. 104.

Remarks: The superfluous name *Betuloxylon* was rightly rejected by Nagel on grounds of priority. Original in Mus. Univ. Halle. Wood of this species recorded by Fietz from the Pleistocene of Silesia is here re-named *Betula* sp.

Occurrence: Oligocene; Siebengebirge (Stein near Oberkassel).

**Betulinium parisiense** Unger.

1845 *Betulinium parisiense* Unger, p. 215.

1847 *Betulinium parisiense* Unger: Unger, p. 119.

1847 *Betulinium parisiense* Unger: Graves, p. 709.

1849 *Betulinium parisiense* Unger: Unger, p. 319.

1859 *Betulinium parisiense* Unger: Unger, p. 398.

1857 *Betulinium parisiense* Unger: Unger, p. 11, pl. III, f. 4, 5.

1866 *Betulinium parisiense* Unger: Watelet, p. 131.

1872 *Betulinium parisiense* Unger: Schimper, p. 575.

1878 *Betulinium* cf. *parisiense* Unger: Stur, p. 9.

1882 *Betulinium parisiense* Unger: Felix, pp. 38, 40.

1890 *Betulinium parisiense* Unger: Kaiser, p. 8.

1890 *Betuloxylon parisiense* (Unger) Lakowitz, p. 29.

1909 *Betuloxylon parisiense* (Unger): Fritel, p. 151.

1916 *Betulinium parisiense* Unger: Nagel, p. 105.

Remarks: Unger gives "*Exogenites* Brongniart" as a synonym of *Betulinium parisiense*, but this is a misuse of Brongniart's name, which was intended to have a wider significance.

Felix (1882, p. 40) doubts whether this wood belongs to the *Betulaceae*, as also does Lakowitz (1890). Graves (1847) gives a long list of localities for this species and Fritel (1909) also gives a list of localities where fossil wood has been found in the Eocene sands of the Paris basin, but neither author states whether all of them have been examined and identified as *Betulinium*.

Occurrence: Eocene (Cuisian); Near Paris.

? Tertiary; Poland (Wieliczka).

**Betulinium paronae** Pampaloni.

1904 *Betulinium paronae* Pampaloni, p. 547, f. 12—14.

Occurrence: Pliocene; Piedmont (Astigiano).

**Betulinium priscum Felix.**

1884 *Betulinium priscum* Felix, p. 8, pl. IV, f. 2.

1889 *Betulinium priscum* Felix: Staub, p. 186.

1890 *Betulinium priscum* Felix: Kaiser, p. 8.

1890 *Betuloxylon priscum* (Felix) Lakowitz, p. 29.

1916 *Betulinium priscum* Felix: Nagel, p. 105.

Remarks: Felix names the wood *B. priscum* "nov. sp.", but states that it probably belongs to the birch leaves from the same deposit which have been named *Betula prisca* Ett. Felix discusses the differences between this wood and other species of *Betulinium*. Originals in Mus. Ungar. Geol. Reichsanst. Wood from the same locality had previously been noted by Stur, but not described.

Occurrence: Tertiary; Hungary (Medgyaszo).

**Betulinium rocae (Conwentz) Nagel.**

1885 *Betuloxylon rocae* Conwentz, p. 452.

1890 *Betuloxylon rocae* Conwentz: Kaiser, p. 8.

1890 *Betuloxylon rocae* Conwentz: Lakowitz, p. 29.

1916 *Betulinium rocae* (Conwentz) Nagel, p. 105.

Remarks: A poorly preserved wood from southern Patagonia is tentatively compared by Kräusel (1924) with this species.

Occurrence: Oligocene; Argentina (Fresno-Menoco).

**Betulinium rossicum Mercklin.**

1855 *Betulinium rossicum* Mercklin, p. 33, pl. IV, f. 1, 2; V, f. 1—11.

1865 *Betulinium rossicum* Mercklin: Eichwald, p. 57.

1880 *Betulinium rossicum* Mercklin: Krendowsky, p. 216 [Not seen].

1882 *Betulinium rossicum* Mercklin: Felix, p. 38.

1890 *Betuloxylon rossicum* (Mercklin) Lakowitz, p. 29.

1890 *Betulinium rossicum* Mercklin: Kaiser, p. 8.

Occurrence: ? Horizon; Russia (Kursk).

**Betulinium stagnigenum Unger.**

1850 *Betulinium stagnigenum* Unger, p. 398.

1857 *Betulinium stagnigenum* Unger: Unger, p. 11, pl. III, f. 6, 7.

1872 *Betulinium stagnigenum* Unger: Schimper, p. 575.

1882 *Betulinium stagnigenum* Unger: Felix, p. 39.

1890 *Betulinium stagnigenum* Unger: Kaiser, p. 9.

1890 *Betuloxylon stagnigenum* (Unger) Lakowitz, p. 29.

1916 *Betulinium stagnigenum* Unger: Nagel, p. 106.

Remarks: According to Lakowitz, the generic determination is doubtful.

Occurrence: Miocene (Süsswasserkalk); Bohemia (Tuchoritz).

**Betulinium tenerum Unger.**

1842 *Betulinium tenerum* Unger, p. 101.

1842a *Betulinium tenerum* Unger: Unger, p. 173.

1845 *Betulinium tenerum* Unger: Unger, p. 215.

1847 *Betulinium tenerum* Unger: Unger, p. 118, pl. XXXIV, f. 8—10.

1850 *Betulinium tenerum* Unger: Unger, p. 398.

1852 *Betulinium tenerum* Unger: Unger, p. 106, pl. XXXIX, f. 13.

1872 *Betulinium tenerum* Unger: Schimper, p. 575.

1882 *Betulinium tenerum* Unger: Felix, p. 39.

1883 *Betulinium tenerum* Unger: Hofmann, p. 88.

1887 *Betulinium tenerum* Unger: Kobbe, p. 40.

1890 *Betulinium tenerum* Unger: Kaiser, p. 9.

1890 *Betuloxylon tenerum* (Unger) Lakowitz, p. 29.

Remarks: Originals said to be in the National Museum at Linz. Considered by Lakowitz to be of doubtful determination.

Occurrence: Tertiary (Miocene ?); Austria (Freystadt, St. Stephen), Mecklenburg.

### *Betulinium* sp.

1869 *Betula salzhauseensis* Goeppert: Schenk, p. 379.

1882 *Betulinium* sp.: Beck, p. 760.

1886 *Betula salzhauseensis* ? Goeppert: Beck, p. 351.

1890 *Betula salzhauseensis* Goeppert: Kaiser, p. 8.

Remarks: Bark and poorly preserved wood, identified by Schenk (1869) with the leaf-species *Betula salzhauseensis* Goeppert, but Beck (1882) rightly considers that it is best described as *Betulinium* sp. It might perhaps be included in *Betulinium lignitum* Kraus. See also Nagel (1916, pp. 89, 90, 106—7), who wrongly ascribes the combination *Betulinium salzhauseensis* to Schenk.

Occurrence: Oligocene; Saxony.

### *Betulinium* sp.

1882 *Betulinium diluviale* (Unger) Felix, p. 37.

1883 *Betulinium*: Felix, p. 62.

1890 *Betulinium diluviale* Felix: Kaiser, p. 7.

Remarks: Felix in 1882 united some silicified woods from Cracow with Unger's *Ulmium diluviale* under the name *Betulinium*, but later he showed that Unger's species belonged to the *Lauraceae* (see *Laurinum diluviale*). He left the Cracow wood in *Betulinium* without any specific name (1883, p. 62) but Kaiser lists it as *B. diluviale* Felix. This name cannot stand, and as the wood has never been figured, it would not be proper at present to give it a new specific name. I therefore enter it here as *Betulinium* sp.

Occurrence: Tertiary; Poland (near Cracow).

### *Betulinium* sp.

1884 *Betulinium* sp.: Hofmann, p. 194 (43).

Remarks: Poorly preserved and not definitely identifiable.

Occurrence: Horizon and locality unknown (Utrecht Museum).

### ? *Betulinium* sp.

1873 *Betula* sp.: Dawson, p. 68.

1888 *Betula*: Dawson, p. 33.

Remarks: No figures or descriptions. Requires confirmation.

Occurrence: Cretaceous; Vancouver Island.

Upper Cretaceous (Belly River Series); Western Canada (Ribstone Creek).

### *Betulinium* sp.

1920 *Betula* sp.: Kräusel, p. 456, pl. XXXIII, f. 6; XXXIV, f. 2—4; text-fig. 5—7.

Occurrence: Miocene; Silesia (Kohlfurt and Beuthen).

[*Betuloxylon* Kaiser, 1880, p. 511.]

Synonym of *Betulinium*, q. v. for all species described under *Betuloxylon*.

[**Bredaea** Goeppert, 1854, p. 55.]

Sunk in **Dipterocarpoxyton**, q. v. for **B. moroides**.

**Brongniartites** Unger, 1845, p. 264.

[Non Zalessky, 1927, Mem. Com. Geol., N. S. 176, p. 39.]

**Brongniartites graecus** Unger.

1845 **Brongniartites graecus** Unger, p. 264.

1850 **Brongniartites graecus** Unger: Unger, p. 524.

1852 **Brongniartites graecus** Unger: Prokesch-Osten & Unger, p. 857.

1890 **Brongniartites graecus** Unger: Kaiser, p. 34.

1898 **Brongniartites graecus** Unger: Fliche, p. 302.

Occurrence: Tertiary; Greece (Lesbos).

**Bronnites** Unger, 1842, p. 102.

**Bronnites antiguensis** Unger.

1833 Dicotyledonous wood: Witham, p. 67, pl. XVI, f. 11.

1842 **Bronnites antiguensis** Unger, p. 102.

1842a **Bronnites antiguensis** Unger: Unger, p. 178.

1845 **Bronnites antiguensis** Unger: Unger, p. 263.

1850 **Bronnites antiguensis** Unger: Unger, p. 524.

1890 **Bronnites antiguensis** Unger: Kaiser, p. 34.

1890 **Bronnites antiguensis** Unger: Schenk, p. 902.

Remarks: In the opinion of Schenk this wood is not identifiable.

Occurrence: Tertiary; Antigua.

**Bronnites orientalis** Unger.

1850 **Bronnites orientalis** Unger, p. 524.

1890 **Bronnites orientalis** Unger: Kaiser, p. 35.

Occurrence: ? Cretaceous or Tertiary; Shores of the Bosphorus.

**Bronnites transylvanicus** Ettingshausen.

1851 **Bronnites transylvanicus** Ettingshausen in Hauer, p. 74.

1889 **Bronnites transylvanicus** Ett.: Staub, p. 190.

Occurrence: Tertiary; Transylvania.

**Bronnites vindobonensis** Unger.

[1845 **Bronnites viennensis** Unger, p. 263.]

1850 **Bronnites vindobonensis** Unger, p. 524.

1890 **Bronnites vindobonensis** Unger: Kaiser, p. 34.

Occurrence: Tertiary; Vienna.

**Caesalpinioxylon** Schenk, 1890, p. 901.

(See remarks on **Caesalpinium**).

**Caesalpinioxylon nathorsti** (Schuster).

1910 **Caesalpinium nathorsti** Schuster, p. 10, pl. I, f. 5, 6; II, f. 7, 8.

Remarks: Originals in Nat. Riksmus., Stockholm.

Occurrence: Tertiary; Uruguay.

**Caesalpinioxylon oweni** (Carruthers).

- 1870 *Nicolia oweni* Carruthers, p. 310, pl. XIV, f. 1, 2.  
 1883 *Nicolia oweni* Carruthers: Schenk, pp. 19, 20.  
 1884a *Nicolia minor* Hofmann, p. 485, pl. III, f. 2.  
 1888 *Nicolia oweni* Carruthers: Schenk, pp. 19, 23.  
 1890 *Nicolia oweni* Carruthers: Kaiser, p. 31.  
 1890 *Nicolia minor* Hofmann: Kaiser, p. 35.  
 1901 *Nicolia oweni* Carruthers: Blanckenhorn, pp. 102, 106.  
 1910 *Caesalpinium oweni* (Carruthers) Schuster, p. 8, pl. II, f. 10, 12; III, f. 16, 17; text-fig. 1.

Remarks: Schuster showed that *Nicolia oweni* Carr. probably belonged to the *Caesalpiniae* and united with it *N. minor* Hofmann, whereas *N. aegyptiaca* Unger belonged to the *Sterculiaceae*. Schenk (1883) in discussing *N. oweni*, had already suggested a possible affinity with the *Caesalpiniae*.

Occurrence: Upper Cretaceous; Egypt (Gebel Garra near Assouan, Gebel Hefhuf in Baharia), Sudan (Dargara near Berber).

Oligocene; Egypt (near Cairo).

Middle Pliocene; Egypt (desert near Wadi Natrum).

Tertiary; Australia (Lake Eyre), Bismarck Archipelago (Dobo).

**Caesalpinioxylon palembangense** Kräusel.

- 1922 *Caesalpinioxylon palembangense* Kräusel, p. 247, pl. II, f. 1; III, f. 1, 2; VII, f. 6, 11; text-fig. 21.  
 1923 *Shoreoxylon palembangense* (Kräusel) den Berger, p. 144.  
 1925 *Caesalpinioxylon palembangense* Kräusel: Kräusel, p. 338.  
 1928 *Shoreoxylon palembangense* (Kräusel): Pfeiffer & van Heurn, p. 1007.

Remarks: Kräusel (1925, p. 340) admits the possibility that this wood may belong to the *Dipterocarpaceae*.

Occurrence: Miocene; Sumatra.

**Caesalpinioxylon quirogae** Schenk.

- 1890 *Caesalpinioxylon quirogae* Schenk, p. 901, f. 432.  
 1929 *Caesalpinioxylon quirogae* Schenk: Chiarugi, p. 418.  
 Occurrence: Tertiary?; Western Sahara on the coast near Huisi Aïssa.

**[Caesalpinium Schleiden 1855, p. 27.]**

Remarks: It is not at all clear what Schleiden intended to convey by this name, and he gives no diagnosis, figure, or description. Nevertheless Schuster (1910, p. 8) adopted Schleiden's *Caesalpinium* for woods related to the *Caesalpinaceae*, although the name *Caesalpinioxylon* had been introduced by Schenk (1890). Kräusel (1922) discarded Schleiden's name in favour of *Caesalpinioxylon*, but also overlooked Schenk's work.

**[Caesalpinium tirolense** Schleiden.]

- 1855 *Caesalpinium tirolense* Schleiden, p. 27.  
 1890 *Caesalpinium tirolense* Schleiden: Kaiser, p. 30.  
 Remarks: Nomen nudum. Resinous wood, stated to resemble that of *Caesalpinia echinata*.  
 Occurrence: Oligocene; Tyrol (Häring).

**Cantia** Stopes, 1915, p. 260.**Cantia arborescens** Stopes.

1915 **Cantia arborescens** Stopes, p. 260, pls. XXVI—XXVIII; text-fig. 76—78.

Remarks: Affinities uncertain. Originals in Geol. Dept., Brit. Mus. (Nat. Hist.).

Occurrence: Lower Cretaceous (Aptian); England (Kent).

**Capparidoxylon** Schenk, 1883, p. 12.**Capparidoxylon geinitzi** Schenk.

1883 **Capparidoxylon geinitzi** Schenk, p. 12, pl. I, f. 3, 4.

1890 **Capparidoxylon geinitzi** Schenk: Kaiser, p. 24.

Remarks: Compared with various species of *Capparis*.

Occurrence: ? Oligocene; near Cairo.

**Carpinoxylon** Vater, 1884, p. 848.**Carpinoxylon compactum** Vater.

1884 **Carpinoxylon compactum** Vater, p. 848, pl. XXIX, f. 28, 29.

1887a **Carpinoxylon compactum** Vater: Felix, p. 150.

1890 **Carpinoxylon compactum** Vater: Kaiser, p. 10.

Occurrence: Lower Senonian?; Brunswick (Helmstedt).

**Carpinoxylon pfefferi** Platen.

1908 **Carpinoxylon pfefferi** Platen, p. 40, pl. II, f. 1, 2.

Remarks: Schönfeld (1919, p. 8) suggests that this wood may be lauraceous.

Occurrence: Miocene; California.

**Carpinoxylon vasculosum** Felix.

1887 **Carpinoxylon vasculosum** Felix, p. 150, pl. XXVII, f. 4, 5.

1889 **Carpinoxylon vasculosum** Felix: Staub, p. 187.

1890 **Carpinoxylon vasculosum** Felix: Kaiser, p. 10.

Remarks: Original in Mus. Ungar. Geol. Reichsanst.

Occurrence: ? Tertiary; Hungary.

**Carpinoxylon** sp.

1930a **Carpinoxylon**: Schönfeld, p. 70.

Occurrence: Miocene; Saxony (Deutzen).

**Carpinoxylon** sp.

1920 **Carpinus** sp.: Kräusel, p. 454, pl. XXXIII, f. 5; XXXVIII, f. 6, 7; text-fig. 4.

Occurrence: Miocene; Silesia (Moys).

**Carpinus** L.**Carpinus** sp.

1926a **Carpinus**: Fietz, p. 417.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**Cassia L.****[Cassia alata L.]**

1911a *Cassia alata* L.: Schuster, p. 246, f. 8.

Remarks: Wood referred to a living species, but it has been pointed out by Hallier (1) that *Cassia alata* is herbaceous and not a tree (2) that it is an American plant which only occurs as a weed in Java.

Occurrence: Pithecanthropus Beds; Java.

**Cassioxylon Felix, 1882, p. 69.****Cassioxylon anomalum Felix.**

1882 *Cassioxylon anomalum* Felix, p. 69.

1883a *Cassioxylon anomalum* Felix: Felix, p. 15, pl. II, f. 3, 5.

1884 *Cassioxylon anomalum* Felix: Vater, p. 850.

1890 *Cassioxylon anomalum* Felix: Kaiser, p. 30.

Remarks: Resembles *Cassia speciosa*. Original in Munich.

Occurrence: ? Tertiary; probably Antigua.

**Cassioxylon bartholomoei Fliche.**

1888 *Cassioxylon bartholomoei* Fliche, p. 572.

Occurrence: Tertiary; Algeria (Southern Oran, between Ain Sefra and Tiout).

**Cassioxylon zirkeli Felix.**

1884 *Cassioxylon zirkeli* Felix, p. 32, pl. III, f. 1, 5; IV, f. 1.

1889 *Cassioxylon zirkeli* Felix: Staub, p. 190.

1890 *Cassioxylon zirkeli* Felix: Kaiser, p. 30.

Remarks: Originals in Mus. Pal. Berlin.

Occurrence: Tertiary; Hungary.

**Castanopsis Spach.****Castanopsis sp.**

1925 *Castanopsis* sp.: Schönfeld, p. 19.

Occurrence: Tertiary (Brown Coal); Germany.

**Casuaroxylon Goeppert & Stache — Stache  
1855, p. 42.****Casuaroxylon anglia Goeppert & Stache.**

1855 *Casuaroxylon anglia* Goeppert & Stache: Stache, p. 42.

Remarks: I have found no other references to this and the following species, which are described but not figured by Stache.

Occurrence: Locality and horizon unknown.

**Casuaroxylon extorre Stache.**

1855 *Casuaroxylon extorre* ? Stache, p. 42.

Occurrence: Locality and horizon unknown.

**Celastrinoxylon** Schenk, 1888, p. 21.

**Celastrinoxylon affine** Schenk.

1888 **Celastrinoxylon affine** Schenk, p. 21.

Remarks: Distinct from *Rohlfisia*, which was also referred to the *Celastraceae*.

Occurrence: Tertiary; Egypt.

[**Celtitis** Tuzson, 1909, p. 376,

**Celtites** Tuzson, 1911, p. 50.]

Included in **Ulmium**, q. v. for **C. kleinii**.

**Cercidoxylon** Platen, 1908, p. 138.

**Cercidoxylon zirkeli** Platen.

1908 **Cercidoxylon zirkeli** Platen, p. 139, pl. II, f. 5, 6.

Occurrence: Tertiary (? Pliocene); Nebraska (Running Water River).

[**Charpentieria** Unger, 1845, p. 262.]

Remarks: Non **Charpentieria** Gaudichaud--Beaupré, 1826.

See **Dryoxylon nivium**.

**Cinnamomum** L.

cf. **Cinnamomum camphora** Nees & Eberm.

1925 cf. **Cinnamomum camphora**: Schönfeld, p. 19.

Occurrence: Tertiary (Brown Coal); Germany.

**Combretacinium** Felix, 1894, p. 91.

**Combretacinium quisqualoides** Felix.

1894 **Combretacinium quisqualoides** Felix, p. 90, pl. X, f. 1a—c.

Remarks: Compared with *Quisqualis pubescens*.

Occurrence: Eocene (Sumgait series); Caucasus (Apscheron).

**Constantinium** Unger, 1863, p. 517.

**Constantinium proteoides** Unger.

1863 **Constantinium proteoides** Unger in Tchihatchef p. 517.

1866a **Constantinium proteoides** Unger: Unger, p. 322, pl. XVII, f. 1, 2.

Remarks: Referred by Unger to the *Proteaceae*.

Occurrence: Tertiary; Thrace (Lake Derkos).

**Cornoxylon** Conwentz, 1882, p. 157.

**Cornoxylon cretaceum** (Caspary).

1888 **Cornus cretacea** Caspary, p. 39.

1889 **Cornus cretacea** Caspary: Caspary, p. 23, pl. V, f. 5—8; VI, f. 1—3.

1890 *Cornus cretacea* Caspary: Kaiser, p. 28.

Remarks: Compared with *Cornus alba*. Original in Mus. Bot. Gart., Königsberg.

Occurrence: Probably Cretaceous; Königsberg?.

### *Cornoxydon erraticum* Conwentz.

1882 *Cornoxydon erraticum* Conwentz, p. 157.

1889 *Cornoxydon erraticum* Conwentz: Caspary, p. 33.

1890 *Cornoxydon erraticum* Conwentz: Kaiser, p. 29.

Remarks: A Senonian wood compared with this species by Vater was considered by Caspary to be distinct (See *Cornoxydon vateri*).

Occurrence: Pleistocene (erratic derived from an earlier formation); Holstein.

### *Cornoxydon holsatiae* Conwentz.

1882 *Cornoxydon holsatiae* Conwentz, p. 160.

1883 *Cornoxydon holsatiae* Conwentz: Hofmann, p. 89.

1889 *Cornoxydon "holsaticum"* Conwentz: Caspary, p. 33.

1890 *Cornoxydon holsatiae* Conwentz: Kaiser, p. 29.

Occurrence: Pleistocene (derived); Mecklenburg and Holstein.

### *Cornoxydon latiporosum* Kräusel & Schönfeld.

1924 *Cornoxydon latiporosum* Kräusel & Schönfeld, p. 277, text-fig. 20—26.

1924 *Cornoxydon* sp. (*latiporosum*?): Kräusel & Schönfeld, p. 280.

Remarks: The second entry refers to wood which, though poorly preserved, the authors consider to be probably identical with *C. latiporosum*. The species is compared with *Cornoxydon holsatiae* Conwentz.

Occurrence: Miocene; Holland (S. Limburg).

### *Cornoxydon myricaeforme* Vater.

1884 *Cornoxydon myricaeforme* Vater, p. 846, pl. XXIX, f. 25, 26.

1890 *Cornoxydon myricaeforme* Vater: Kaiser, p. 29.

Remarks: A resemblance to *Myrica* is noted by Vater.

Occurrence: Lower Senonian; Brunswick (Helmstedt).

### *Cornoxydon solidior* (Caspary).

1888 *Cornus cretacea* forma *solidior* Caspary, p. 40.

1889 *Cornus cretacea* forma *solidior* Caspary: Caspary, p. 29, pl. VI, f. 4—17.

1890 *Cornus cretacea* forma *solidior* Caspary: Kaiser, p. 29.

Remarks: Failing a re-investigation of the material, (the originals are in the Mus. Bot. Gart., Königsberg), the name *Cornoxydon solidior* should be used, as it is absurd to introduce a "variety" or "forma" for a fossil wood.

Occurrence: ? Tertiary; Prussia (Herzogsacker near Königsberg).

### *Cornoxydon vateri* (Caspary).

1884 *Cornoxydon* cf. *erraticum* Conwentz: Vater, p. 846, pl. XXIX, f. 27.

1888 *Cornus vateri* Caspary, p. 40.

Remarks: See also Caspary, 1889, p. 33.

Occurrence: Lower Senonian; Brunswick (Helmstedt).

**Cornoxyylon sp.**

1924 **Cornoxyylon** sp.: Kräusel & Schönfeld, p. 282.

Remarks: Referred provisionally to *Cornoxyylon*. May be related to *Hamamelis* and *Liquidambar*.

Occurrence: Miocene; Holland (S. Limburg).

**Corylus L.****Corylus sp.**

1926a **Corylus**: Fietz, p. 417.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**Cottaites** Unger, 1842, p. 101.

[**Cottaites lapidariorum** Unger.]

Synonym of **Ulmium lapidariorum** q. v.

**Cottaites robustior** Unger.

1842 **Cottaites robustior** Unger, p. 102.

1842a **Cottaites robustior** Unger: Unger, p. 176.

1845 **Cottaites robustior** Unger: Unger, p. 265.

1850 **Cottaites robustior** Unger: Unger, p. 526.

1889 **Cottaites robustior** Unger: Staub, p. 191.

1890 **Cottaites robustior** Unger: Kaiser, p. 32.

Remarks: The genus *Cottaites* was placed in the *Leguminosae* by Unger. *C. lapidariorum* however has since been transferred to *Ulmium*, and Schenk remarks (1890, p. 902) that the other two species are certainly not leguminous.

Occurrence: Tertiary; Hungary (Antal near Schemnitz).

**Cottaites vasculosus** Unger.

1845 **Cottaites vasculosus** Unger, p. 265.

1850 **Cottaites vasculosus** Unger: Unger, p. 526.

1890 **Cottaites vasculosus** Unger: Kaiser, p. 32.

Remarks: See *C. robustior*.

Occurrence: Tertiary; Austria (Nicolaiburg).

**Dicotyledonous Wood.**

1835 **Dicotyledonous** wood: Nicol, pp. 335—336.

Remarks: Nicol describes, but does not name or figure, woods from Mull, Scotland, and from Egypt and Nubia. Nicol's collection is now in the Geological Department of the British Museum (Nat. Hist.); two sections of dicotyledons from Mull belong to *Plataninum*, and among a few sections from Egypt, mostly poorly preserved, one at least is *Nicolia aegyptiaca*.

**Dicotyledonous Wood.**

1887 **Dicotyledonous** wood: Stokes, p. 208, pl. XVII, f. 1, 2.

Occurrence: Tertiary; Antigua.

**Dicotyledonous Wood.**

1850 **Dicotyledonous** wood: Dixon, p. 235, pl. XVI, f. 6.

1878 **Dicotyledonous** wood: Carruthers, p. 164, pl. XVI, f. 6.

Occurrence: Eocene; England (Sussex).

**Dicotyledonous Wood.**

1852 **Dicotyledonous** wood: Sorby, p. 91, pl. XVI.

Remarks: Said to be from Lias at Keynsham, but it was only obtained from a dealer and there is probably a mistake in the locality and horizon.

**Dicotyledonous Wood.**

1856 **Dicotyledonous** wood: Bailey, p. 337, pl. XII, f. 1, 2.

Occurrence: ?Tertiary; U. S. A. (W. slope of Sierra Nevada).

**Dicotyledonous Wood.**

1856 **Dicotyledonous** wood: Schaeffer, p. 338, pl. XII, f. 3, 4.

Occurrence: ?Tertiary; U. S. A. (Colorado Desert).

**Dicotyledonous Wood.**

1875 **Dicotyledonous** wood: Johnston, p. 53, f. 14, 15.

1888 **Dicotyledonous** wood: Johnston, pp. 270, 271, pl. XLVII, f. 9, 10; ? pl. XLVIII, f. 6, 7.

Remarks: The figures are poor and quite unidentifiable. Johnston mentions "two or three undetermined exogens" in addition to *Banksia* (q. v.).

Occurrence: Tertiary; Tasmania.

**Dicotyledonous Wood.**

1882a **Dicotyledonous** wood (Cedrelaceae): Kraus, p. 6.

Remarks: Regarded as certainly belonging to the *Cedrelaceae* (= *Meliaceae*), but not generically identifiable. Popularly supposed to be wood of a living plant which becomes silicified when buried in the soil.

Occurrence: ?Tertiary; Mexico.

**Dicotyledonous Wood.**

1885 „Eigentümliches Laubholz": Quenstedt, p. 1151, pl. XCVIII, f. 24.

Remarks: Quite unrecognizable from the figures given.

Occurrence: Tertiary; Germany (Dietenheim).

**Dicotyledonous Wood.**

1902 **Dicotyledonous** wood: Knowlton, p. 640, pl. XXV, f. 14.

1906 **Dicotyledonous** wood: Jeffrey & Chrysler, p. 199, pl. L, f. 7—12; LI, f. 13—15.

Remarks: Knowlton compared this wood with *Betula*. Jeffrey & Chrysler name it *Betuloxylon* in the legend to the plate, but in the text they say "it can scarcely be a *Betuloxylon*".

Occurrence: Eocene; Vermont (Brandon).

**Dicotyledonous Wood.**

1911 **Dicotyledonous** wood: Tuzson, p. 53, pl. II, f. 5; text-fig. 26—30.

1911 **Dicotyledonous** wood: Tuzson, p. 55, text-fig. 31—37.

Occurrence: Tertiary; Hungary (Kislöd and Pét).

**Dicotyledonous Wood.**

1912 **Dicotyledonous** wood: Compter, pp. 413—420.

Remarks: Compter describes ten different petrified specimens from a diluvial deposit, but does not name any of them. Some are compared with *Quercinium*, and one with *Populus*. Most of them seem to have been poorly preserved.

Occurrence: ? Tertiary; Weimar (Apolda).

**Dicotyledonous Wood.**

1914 **Dicotyledonous** wood: Oswald, p. 130.

Remarks: Calcified trunks belonging to at least four different types, perhaps referable (according to Dr. H. Bancroft) to the *Leguminosae*, the *Lauraceae* or the *Bombacaceae*, the *Humiriaceae* and the *Caprifoliaceae*. A new description of these and other African woods will shortly be published by Dr. Bancroft in the *Annals of Botany*.

Occurrence: Miocene; Kenya Colony (Kikongo near Karungu).

**Dicotyledonous Wood.**

1920 **Dicotyledonous** wood: Sahni, p. 34, pl. III, f. 16.

Occurrence: Tertiary; Queensland (Condamine River).

**Dicotyledonous Wood.**

1924 **Dicotyledonous** wood: Kräusel, p. 2, pl. I, f. 1—7.

Remarks: Perhaps belongs to the *Ericaceae* or the *Myrtaceae*.

Occurrence: Pleistocene; Chiloe.

**Dicotyledonous Wood.**

1924 **Dicotyledonous** wood: Kräusel, p. 28.

Remarks: Poorly preserved; perhaps close to *Betulinium rocae* (Conwentz).

Occurrence: Tertiary; Patagonia.

**Dicotyledonous Wood.**

1924 ? **Betulaceae**: Seward & Holtum, p. 81.

Occurrence: Lower Tertiary (? Eocene); Scotland (Mull).

**Dicotyledonous Wood.**

1926 [Fossilholz]: Udluft, p. 1, pl. II, f. 6—11, 14.

Occurrence: Volcanic tuffs of Mt. Elgon; Central Africa.

**Dicotyledonous Wood.**

1927 **Dicotyledonous** wood: Barnard, p. 113, pls. V, VI.

Remarks: The affinities are considered to be with the *Saxifragaceae*.

Occurrence: Tertiary; New South Wales (Ulladulla).

**Dicotyledonous Wood.**

- 1928 **Dicotyledonous** wood: Chhibber, p. 13, pl. I.  
Occurrence: Late Tertiary; Burma.

**Dicotyledonous Wood.**

- 1928 **Dicotyledonous** wood: Donath, p. 57, f. 1—3.  
Remarks: Silicified wood, perhaps oak, embedded in basalt.  
Occurrence: Tertiary?; Saxony (Ostritz).

**Diospyros L.****Diospyros sp.**

- 1925 **Diospyros** sp.: Schönfeld, p. 19.  
Remarks: Compare Beck's record of *Ebenoxyton tenax*.  
Occurrence: Tertiary (Brown Coal); Germany.

**Dipterocarpoxyton** Holden, 1916, p. 271.

Remarks: Instituted for fossil woods of the family *Dipterocarpaceae*, but used by den Berger (1927) in a more restricted sense for woods resembling those of *Dipterocarpus* and *Anisoptera* only. See also Pfeiffer and van Heurn (1928). — The wider usage has been adopted in this Catalogue.

**Dipterocarpoxyton annamense** Colani.

- 1919 **Dipterocarpoxyton annamense** Colani, p. 2, pls. I, II.  
Remarks: The wood does not seem to be very well preserved, and the generic identification should be accepted with reserve.  
Occurrence: ? Tertiary; Annam.

**Dipterocarpoxyton burmense** Holden.

- 1916 **Dipterocarpoxyton burmense** Holden, p. 271, pl. XXIX, f. 1—5.  
1922 **Dipterocarpoxyton burmense** Holden: Kräusel, p. 266.  
1922a **Dipterocarpoxyton burmense** Holden: Kräusel, p. 14.  
1928 **Dipterocarpoxyton burmense** Holden: Chhibber, p. 22.  
Remarks: Kräusel considers that the wood is related to *Hopea* or *Shorea* rather than to *Dipterocarpus*.  
Occurrence: Tertiary; Burma.

**Dipterocarpoxyton djambiense** (den Berger).

- 1922 **Dipterocarpoxyton** sp.: Kräusel, p. 269, pl. I, f. 6; II, f. 7—9; V, f. 9; VI, f. 1; VII, f. 2; text-fig. 26.  
1922a **Dipterocarpoxyton** sp.: Kräusel, p. 14.  
1923 **Shoreoxyton djambiense** den Berger, p. 147.  
Remarks: See remarks on the genus *Shoreoxyton*. On the age of the Sumatra and Java woods see van Heurn (1927).  
Occurrence: Tertiary; South Sumatra.

**Dipterocarpoxyton goepperti** Kräusel.

- 1926 **Dipterocarpoxyton goepperti** Kräusel, p. 4, pl. I, f. 3, 4; II, f. 5, 6.  
1927 **Dipterocarpoxyton goepperti** Kräusel: den Berger, p. 498.  
Occurrence: Tertiary; Java (Nangoeng).

**Dipterocarpoxyton javanense** Kräusel.

- 1922a *Dipterocarpoxyton javanense* Kräusel, p. 13, pl. I, f. 1—5; text-fig. 1, 2.  
 1926 *Dipterocarpoxyton javanense* Kräusel: Kräusel, p. 3.  
 1927 *Dryobalanoxylon javanense* (Kräusel) den Berger, p. 498.  
 Occurrence: Tertiary; Java (Bolang).

**Dipterocarpoxyton kräuseli** (den Berger).

- 1922 *Dipterocarpoxyton* sp. (*tobleri* ?): Kräusel, p. 267, pl. I, f. 4; III, f. 4, 5; VII, f. 1; text-fig. 25.  
 1922a *Dipterocarpoxyton* sp. (*tobleri* ?): Kräusel, p. 14.  
 1923 *Dryobalanoxylon kräuseli* den Berger, p. 147.  
 Remarks: See remarks on the genus *Shoreoxylon*.  
 Occurrence: Tertiary; South Sumatra.

**Dipterocarpoxyton moroides** (Goeppert) Kräusel.

- 1854 *Bredaea moroides* Goeppert, p. 56, pl. I, f. 3—5.  
 1890 *Bredaea moroides* Goeppert: Kaiser, p. 18.  
 1926 *Dipterocarpoxyton moroides* (Goeppert) Kräusel, p. 4, pl. I, f. 2; II, f. 3, 4.  
 1927 *Shoreoxylon moroides* (Goeppert) den Berger, p. 498.  
 Occurrence: Tertiary; Java.

**Dipterocarpoxyton porosum** (Stopes) Kräusel.

- 1912 *Woburnia porosa* Stopes, p. 9, pl. VII, f. 7; VIII, f. 8; text-fig. 6.  
 1915 *Woburnia porosa* Stopes: Stopes, p. 267, text-fig. 79—81.  
 1922 *Woburnia "scottii"* Stopes: Kräusel, p. 266.  
 1922a *Dipterocarpoxyton "scottii"* Stopes: Kräusel, pp. 12, 14.  
 Remarks: See remarks on the name *Woburnia*. Stopes stated that the wood was "in complete agreement with some of the *Dipterocarpaceae*", and Kräusel transferred it to the form-genus *Dipterocarpoxyton*, though he made an obvious mistake in quoting the specific name. Originals in Geol. Dept., Brit. Mus. (Nat. Hist.). Also figured Scott, D. H. 1924, Extinct Plants, p. 54, f. 6.  
 Occurrence: Lower Cretaceous (Aptian); England (Woburn).

**Dipterocarpoxyton spectabile** (Crié) Kräusel.

- 1888 *Naucleoxylon spectabile* Crié, p. 19, pl. VIII, f. 1, 2.  
 1926 *Dipterocarpoxyton spectabile* (Crié) Kräusel, p. 2, pl. I, f. 1; II, f. 1, 2.  
 1927 *Dryobalanoxylon spectabile* (Crié) den Berger, p. 498.  
 Occurrence: Tertiary; Java.

**Dipterocarpoxyton swedenborgii** (Schuster) Kräusel.

- 1910 *Grewioxylon swedenborgii* Schuster, p. 14, pl. I, f. 1—4; text-fig. 3.  
 1922 *Dipterocarpoxyton swedenborgii* (Schuster): Kräusel, p. 267.  
 1922a *Dipterocarpoxyton swedenborgii* (Schuster): Kräusel, pp. 12, 14.  
 Remarks: Kräusel showed that this wood had nothing to do with *Grewia*, but was close to his *Dipterocarpoxyton tobleri*.  
 Occurrence: Tertiary; East Indies.

**Dipterocarpoxyloxy. tobleri** Kräusel.

- 1922 *Dipterocarpoxyloxy. tobleri* Kräusel, p. 263, pl. I, f. 5; II, f. 6; III, f. 3; VI, f. 8; VII, f. 10; text-fig. 24.  
 1922a *Dipterocarpoxyloxy. tobleri* Kräusel: Kräusel, p. 14.  
 1923 *Dryobalanoxylon tobleri* (Kräusel) den Berger, p. 146.  
 1925 *Dipterocarpoxyloxy. tobleri* Kräusel: Kräusel, p. 340.  
 1928 *Dryobalanoxylon tobleri* (Kräusel): Pfeiffer & van Heurn, p. 1007.  
 Occurrence: Tertiary; South Sumatra.

**Dipterocarpoxyloxy. spp.**

- 1927 *Dryobalanoxylon* sp.: van Heurn, p. 284, pl. I, f. 2, 3.  
 1927 *Shoreoxyloxy. sp.?*: van Heurn, p. 284, pl. I, f. 4.  
 1928 *Dipterocarpoxyloxy. Dryobalanoxylon, Shoreoxyloxy. spp.*: Pfeiffer & van Heurn, p. 1006.

Remarks: Pfeiffer & van Heurn examined a large series of woods from Bolang, three of which were figured by van Heurn (1927), but they say that "no attempt was made to establish which of the species found of this family [*Dipterocarpaceae*] corresponded with the species previously described by Kräusel and den Berger."

According to van Heurn (1927, p. 285) the fossil woods of Sumatra belong in the main to the Pliocene, and those of Java to the Plio-Pleistocene.

Occurrence: Plio-Pleistocene; Java (Bolang).

**? Dipterocarpoxyloxy. sp.**

- 1922 ? *Dipterocarpoxyloxy. sp.*: Kräusel, p. 271, pl. I, f. 7; IV, f. 1; text-fig. 27.

Remarks: For other woods first described by Kräusel as *D. sp.*, see *D. djambiense* and *D. kräuseli*.

Occurrence: Tertiary; South Sumatra.

**Djambioxyloxy. Kräusel, 1922, p. 272.****Djambioxyloxy. sumatrense** Kräusel.

- 1922 *Djambioxyloxy. sumatrense* Kräusel, p. 272, pl. II, f. 2; IV, f. 7; V, f. 1, 6—8; VII, f. 7—9, 12; text-fig. 28.  
 1923 *Djambioxyloxy. sumatrense* Kräusel: den Berger, p. 147.

Remarks: Perhaps belongs to the *Sapindaceae*.

Occurrence: Tertiary; Sumatra.

**Dombeyoxyloxy. Schenk, 1883, p. 13.****Dombeyoxyloxy. aegyptiacum** Schenk.

- 1883 *Dombeyoxyloxy. aegyptiacum* Schenk, p. 13.  
 1887 *Dombeyoxyloxy. aegyptiacum* Schenk: Felix, p. 522.  
 1890 *Dombeyoxyloxy. aegyptiacum* Schenk: Kaiser, p. 24.  
 1910 *Dombeyoxyloxy. aegyptiacum* Schenk: Schuster, p. 12, pl. III, f. 18.

Remarks: Compared by Schenk with the wood of the *Sterculiaceae*, and especially with the recent genera *Ruizia* and *Guazuma*; by Felix with *Guazuma*; and by Schuster with *Eriodendron*. Original in Mus. Pal. Dresden.

Occurrence: ? Oligocene; Egypt (Seeber near Tureh; between Gart el Leben and Moghara).

**Dombeyoxylon affine Felix.**

1887 *Dombeyoxylon affine* Felix, p. 520, pl. XXV, f. 2, 3, 5.

1890 *Dombeyoxylon affine* Felix: Kaiser, p. 24.

Remarks: Compared with the recent *Dombeya mollis* (*Sterculiaceae*). Originals in Min. Mus. Berlin.

Occurrence: Tertiary; Abyssinia (Edda Jesus near Axum).

**Dombeyoxylon jacksonensis Berry.**

1924 *Dombeyoxylon jacksonensis* Berry, p. 181, pls. XXXVI, XXXVII.

Remarks: Compared with *D. affine* Felix from Abyssinia. Type in U. S. Nat. Mus.

Occurrence: Eocene (Fayette sandstone); Louisiana (Hornbeck).

[**Dryobalanoxylon** den Berger, 1923, p. 146 & 1927, p. 497.]

For dipterocarpaceous woods resembling *Dryobalanops*. Here included (following Kräusel) in *Dipterocarpoxyton*.

**Dryoxylon** Schleiden in Schmid, 1853, p. 28.

Remarks: This form-genus was expressly founded for dicotyledonous woods of uncertain affinity, but unfortunately it seems to have been entirely overlooked. The name *Exogenites* was also founded for a similar purpose by Brongniart in 1822, but as in those days the term "dicotyledon" included conifers and even tree lycopods, Schleiden's name is preferable, for he says "Ich zog daher den allgemeinen Namen *Dryoxylon* Holz eines Laubholz-Baumes vor". As it happens, the only species described by Schleiden was probably not a dicotyledon at all, but that does not affect the use of a form-genus name.

A score or more of Unger's species, to mention no others, might well be listed merely as *Dryoxylon*, but it has not seemed worth while to make the transfer, when one has not had an opportunity of examining the original specimens, except in the cases where Unger's generic names were pre-occupied. I have also included in *Dryoxylon* a few species of somewhat doubtfully identified woods (such as *Erica sambiensis*) in order to avoid the unwarrantable use of a recent generic name on the one hand, or the institution of yet another form-name on the other.

**Dryoxylon americanum (Unger).**

1852a *Roemeria americana* Unger, p. 95.

Remarks: The name *Roemeria* is pre-occupied.

Occurrence: Cretaceous; Texas.

[**Dryoxylon jenense** Schleiden.]

1853 *Dryoxylon jenense* Schleiden in Schmid, p. 28.

Remarks: A fragmentary wood compared with that of *Salix*, which can hardly be correct if the fossil really came from the Trias. Either the identification of the wood or the horizon must be wrong.

Occurrence: Lower Muschelkalk; Germany (Wogau near Jena).

**Dryoxylon laxum (Caspary).**

1888 *Magnolia laxa* Caspary, p. 38.

1889 *Magnolia laxa* Caspary: Caspary, p. 1, pl. I, f. 1—12.

1890 *Magnolia laxa* Caspary: Kaiser, p. 24.

Remarks: The identification with *Magnolia* does not seem absolutely certain, and I have therefore transferred the species to *Dryoxylon*.

Occurrence: Tertiary; East Prussia.

**Dryoxylon nivium (Unger).**

1845 *Charpentiera nivium* Unger, p. 262.

1850 *Charpentiera nivium* Unger: Unger, p. 523.

1890 *Charpentiera nivium* Unger: Kaiser, p. 35.

Remarks: The name *Charpentiera* is pre-occupied.

Occurrence: ? Tertiary; Galicia.

**Dryoxylon sambiensis (Caspary).**

1888 *Erica sambiensis* Caspary, p. 41.

1889 *Erica sambiensis* Caspary: Caspary, p. 34, pl. VI, f. 18; VII, f. 1—10.

1890 *Erica sambiensis* Caspary: Kaiser, p. 33.

Remarks: Original in Mus. Bot. Gart., Königsberg. Very similar to *E. vagans*, but also compared with some *Myrtaceae*.

Occurrence: Oligocene; Prussia (Palmnicken).

**Dryoxylon silvaticum (Tuzson).**

1909 *Magnolites silvatica* Tuzson, p. 376 (Nomen).

1911 *Magnolites silvatica* Tuzson: Tuzson, p. 44, pl. II, f. 4; text-fig. 17—21.

Remarks: The form-genus *Magnolites* should not be used for fossil woods.

Occurrence: Tertiary (Schotter Beds); Hungary (Lake Balaton).

**Ebenoxylon Felix, 1882, p. 71.****Ebenoxylon boreale Platen.**

1908 *Ebenoxylon boreale* Platen, p. 147.

Occurrence: Tertiary (? Oligocene); Alaska.

**Ebenoxylon diospyroides Felix.**

1882 *Ebenoxylon diospyroides* Felix, p. 71, pl. I, f. 3.

1883a *Ebenoxylon diospyroides* Felix: Felix, p. 17, pl. IV, f. 6.

1890 *Ebenoxylon diospyroides* Felix: Kaiser, p. 33.

Remarks: Similar to wood of *Diospyros*, especially to *D. discolor* and *D. virginiana*.

Occurrence: Tertiary; Antigua.

**Ebenoxylon ebenoides (Schenk).**

1880 *Jordania ebenoides* Schenk, p. 660.

1883 *Jordania ebenoides* Schenk: Schenk, p. 10, pl. IV, f. 13, 14.

1890 *Jordania ebenoides* Schenk: Kaiser, p. 34.

Remarks: The generic name *Jordania* is pre-occupied. The wood is compared with that of the *Ebenaceae*.

Occurrence: Upper Cretaceous; Libyan desert (near Regenfeld).

**Ebenoxylon speciosum Platen.**

1908 *Ebenoxylon speciosum* Platen, p. 68.

Occurrence: Tertiary; California.

**Ebenoxylon tenax Beck.**

1886 *Ebenoxylon tenax* Beck, p. 348, pl. VII, f. 7—9.

1890 *Ebenoxylon tenax* Beck: Kaiser, p. 34.

1930a *Ebenoxylon tenax* Beck: Schönfeld, p. 70.

Remarks: Compared with wood of *Diospyros ebenus*. Schönfeld (1925) refers to Beck's record as wood of *Diospyros*.

Occurrence: Oligocene; Saxony.

**Ebenoxylon tunetanus (Fliche).**

1888 *Jordania tunetana* Fliche, p. 571.

1893 *Jordania tunetana* Fliche: Thomas, p. 3.

Remarks: Compared with *E. ebenoides* (Schenk).

Occurrence: Pliocene; Tunisia (Ain Cherichira).

**Ebenoxylon sp.**

1898 *Ebenoxylon* sp.: Fliche, p. 298.

Occurrence: ?Tertiary; Mytilene (Orthymnos).

**Elaeodendroxylon Platen, 1908, p. 120.**

**Elaeodendroxylon polymorphum Platen.**

1908 *Elaeodendroxylon polymorphum* Platen, p. 120.

Occurrence: Miocene; Yellowstone National Park (Amethyst Mt.).

**[Erica sambiensis Caspary.]**

See *Dryoxylon sambiense*.

**Eucalyptus L'Hérit.**

**Eucalyptus sp.**

1918 *Eucalyptus* sp. aff. *melliodora* Cunningham: Chapman, p. 172, pl. X.

1918 *Eucalyptus* sp. aff. *piperita* Smith: Chapman, p. 174.

Occurrence: Tertiary; Victoria (Gippsland).

**Eugenia Mich.**

**Eugenia cordata Laws.**

1912 *Eugenia cordata* Laws: Warren, p. 367, pls. XXVI, XXVII.

Remarks: Lignitic and partly silicified wood of late date, identified with a Myrtaceous tree which still grows in the vicinity.

Occurrence: Late Tertiary or Pleistocene; coast of Zululand.

**Euonyminium** Mercklin, 1855, p. 23.**Euonyminium auerbachii** Mercklin.1855 **Euonyminium auerbachii** Mercklin, p. 23, pl. I, f. 3; III, f. 1—11.1865 **Euonyminium auerbachii** Mercklin: Eichwald, p. 66.1890 **Euonyminium auerbachii** Mercklin: Kaiser, p. 27.Remarks: Compared with *Euonymus japonicus* by Mercklin. Eichwald doubts the attribution, and even suggests that it may be a conifer.

Occurrence: ? Cretaceous; Russia (Durasovka in Saratov).

**Euonymus** L.**Euonymus** sp.1926a **Euonymus**: Fietz, p. 418.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**Euphorbioxylon** Felix, 1887, p. 525.**Euphorbioxylon speciosum** Felix.1887 **Euphorbioxylon speciosum** Felix, p. 525, pl. XXV, f. 4, 6, 7.1890 **Euphorbioxylon speciosum** Felix: Kaiser, p. 28.Remarks: Compared by Felix with various genera of the *Euphorbiaceae*, including *Euphorbia*, *Jatropha*, and *Hippomane*.

Occurrence: ? Tertiary; Columbia (Sabanilla).

**[Exogenites** Brongniart, 1822, p. 354.]

Founded as a form-genus for fossil dicotyledonous wood (but see remarks on *Dryoxylon*). No species mentioned. Unger includes *Exogenites* as a synonym of *Betulinium parisiense*, which is obviously unwarrantable. Graves (1847, p. 710) gives a list of localities where "*Exogenites*" had been found in the department of Oise, but there are no descriptions, and some of the wood was probably coniferous.

**[Fagoxylon** Stopes & Fujii 1910.]Synonym of **Fegonium**.**Fagus** L.**Fagus** sp.1925 **Fagus** sp.: Schönfeld, p. 19.

Occurrence: Tertiary (Brown Coal); Germany.

**Fegonium** Unger (1842, p. 101) em. Vater.

Vater (1884, p. 836) gives a diagnosis of *Fegonium* "gen. nov." and later explains that the diagnosis given by Unger (1847, p. 103; 1850, p. 407) for *Fegonium* is almost identical with that given for *Plataninium* (1847, p. 138; 1850, p. 414) and further that the species of *Fegonium* described by Unger belong in fact to *Plataninium*.

The spelling *Phegonium* appears in Unger's earliest works.*Fagoxylon* Stopes & Fujii 1910 should be included in *Fegonium*.

**Fegonium caucasicum Felix.**

1894 **Fegonium caucasicum** Felix, p. 102, pl. VIII, f. 2.

Remarks: Felix compares and contrasts this wood with other species of *Fegonium*.

Occurrence: Eocene (Sumgait Series); Caucasus (Apscheron).

**Fegonium dryandraeforme Vater.**

1884 **Fegonium dryandraeforme** Vater, p. 838, pl. XXVIII, f. 7—10.

1890 **Fegonium dryandraeforme** Vater: Kaiser, p. 10.

Occurrence: Lower Senonian (derived from); Brunswick.

**Fegonium hokkaidense (Stopes & Fujii).**

1910 **Fagoxylon hokkaidense** Stopes & Fujii, p. 64, pl. VIII, f. 50—53.

Remarks: Originals in Geol. Dept., Brit. Mus. (Nat. Hist.).

Occurrence: Upper Cretaceous; Japan (Hokkaido).

**Fegonium lignitum Beck.**

1886 **Fegonium lignitum** Beck, p. 350.

1890 **Fegonium lignitum** Beck: Kaiser, p. 10.

1930a **Fegonium lignitum** Beck: Schönfeld, p. 70.

Remarks: Said to resemble *F. dryandraeforme* Vater.

Occurrence: ? Oligocene; Saxony (Raupenhaim, Deutzen).

**[Fegonium megapolitanum Hofmann.]**

Synonym of **Plataninium megapolitanum**, q. v.

**[Fegonium salinarum Unger.]**

Synonym of **Plataninium salinarum**, q. v.

**Fegonium schenki Vater.**

1884 **Fegonium schenki** Vater, p. 839, pl. XXVIII, f. 11—14.

1890 **Fegonium schenki** Vater: Kaiser, p. 11.

Occurrence: Lower Senonian (derived from); Brunswick.

**[Fegonium vasculosum Unger.]**

Synonym of **Plataninium vasculosum**, q. v.

**Felixia Platen, 1908, p. 66.****Felixia latiradiata Platen.**

1908 **Felixia latiradiata** Platen, p. 66, pl. II, f. 3, 4.

Remarks: The name *Felixia* was proposed for leguminous woods which cannot be more nearly identified.

Occurrence: Mio-Pliocene; California.

**Fichtelites** Unger, 1842, p. 101.**Fichtelites articulatus** Unger.1842 **Fichtelites articulatus** Unger, p. 101.1842a **Fichtelites articulatus** Unger: Unger, p. 175.1842b „**Fichtelia articulata**” Unger: Unger, p. 748.1845 **Fichtelites articulatus** Unger: Unger, p. 264.1850 **Fichtelites articulatus** Unger: Unger, p. 525.1890 **Fichtelites articulatus** Unger: Kaiser, p. 32.

Remarks: Put in *Leguminosae* by Unger. Originals said to be in Nat. Mus. Linz.

Occurrence: Tertiary; Upper Austria.

**Ficoxylon** Kaiser, 1880, p. 309.**[Ficoxylon bohemicum** Kaiser.]

Synonym of **F. tropicum**, q. v.

**Ficoxylon cretaceum** Schenk.1883 **Ficoxylon cretaceum** Schenk, p. 14, pl. V, f. 17—19.1888 **Ficoxylon cretaceum** Schenk: Fliche, p. 571.1890 **Ficoxylon cretaceum** Schenk: Kaiser, p. 17.1893 **Ficoxylon cretaceum** Schenk: Thomas, p. 3.1901 **Ficoxylon schenki** Blanckenhorn, p. 113.1929a **Ficoxylon cretaceum** Schenk: Chiarugi, p. 561.

Remarks: *F. cretaceum* Schenk was re-named by Blanckenhorn because it was definitely not of Cretaceous age. This is not a sufficient reason for disregarding the rule of priority; moreover, wood of this type may yet be found in the upper Cretaceous. Compared by Schenk with *Ficus sycomorus*.

Occurrence: Oligocene; Egypt.

Tertiary; Tunisia (Ain Cherichira), Sirtica.

**Ficoxylon helictoxyloides** Platen.1908 **Ficoxylon helictoxyloides** Platen, p. 51.

Occurrence: Mio-Pliocene; California.

**[Ficoxylon schenki** Blanckenhorn.]

Synonym of **F. cretaceum**, q. v.

**Ficoxylon tropicum** (Schleiden).1855 **Ungerites tropicus** Schleiden, p. 37.1880 **Ficoxylon bohemicum** Kaiser, p. 309.1883 **Ficoxylon tropicum** (Schleiden) Felix, p. 81.1890 **Ficoxylon tropicum** (Schleiden): Kaiser, p. 17.

Remarks: According to Felix, the wood is close to that of *Ficus cordata*.

Occurrence: Tertiary; Bohemia (Kostenblatt and Zettow).

**Ficoxylon zirkeli** Hofmann.1884 **Ficoxylon zirkeli** Hofmann, p. 185 (34).1890 **Ficoxylon zirkeli** Hofmann: Kaiser, p. 17.Remarks: Silicified wood, comparable with *Ficus elastica*. Original in Coll. Univ. Utrecht.

Occurrence: Locality and horizon unknown (? Coburg).

**Ficus** L.**Ficus callosa** Willd.1911a **Ficus callosa** Willd.: Schuster, p. 246, f. 6.

Remarks: Wood referred to a living species. The determination should be accepted with reserve.

Occurrence: Pithecanthropus Beds; Java.

**Fraasia** Unger, 1850, p. 457.**Fraasia sapindoides** Unger.1850 **Fraasia sapindoides** Unger, p. 457.1852 **Fraasia sapindoides** Unger: Massalongo, p. 24.1890 **Fraasia sapindoides** Unger: Kaiser, p. 26.Remarks: Placed in the *Sapindaceae* by Unger.

Occurrence: Tertiary; probably Hungary.

**[Fraxinoxylon** Hofmann, 1929, p. 82.]Remarks: For Oleaceous woods resembling *Fraxinus*, the name *Ornoxylon* Felix has priority. Hofmann speaks of *Fraxinoxylon excelsior*, which is an impossible combination.**Fraxinus** L.(See also *Ornoxylon*.)**Fraxinus cf. excelsior** L.1882 **Fraxinus cf. excelsior** L.: Conwentz, p. 147.1928 **Fraxinus excelsior** Hofmann, p. 1, pl. I, f. 1.1929 **Fraxinoxylon excelsior** Hofmann, p. 82.Remarks: If the wood mentioned by Hofmann is identical with that of *Fraxinus excelsior*, there is no point in using the name *Fraxinoxylon*, which in any case would give way to the pre-existing *Ornoxylon*. And if a form-name is to be used, the specific name *excelsior* is inadmissible. The wood may be called *Fraxinus cf. excelsior*.

Occurrence: Pleistocene; Holstein.

Plio-Pleistocene; Hungary (Csadberge).

**Fraxinus** sp.1914 **Fraxinus** sp.: Szafer, p. 349.

Occurrence: Pleistocene; Poland.

**Grewioxylon** Schuster, 1910, p. 14.

Remarks: The only species has been transferred by Kräusel to *Dipterocarpoxyton* (See *D. swedenborgii*).

**Hamamelidoxyton** Lignier, 1907, p. 300.**Hamamelidoxyton renaulti** Lignier.

1907 *Hamamelidoxyton renaulti* Lignier, p. 301, pls. XIX, XX, f. 44—52; XXI, f. 68; XXIII, f. 85, 93; text-fig. 3—5.

Remarks: Compared particularly with *Parrotia*. Two other fossil woods referred to the *Hamamelidaceae* have been described (see *Liquidambaroxyton*).

Occurrence: Tertiary; Antigua, Mexico.

**Hauera** Unger, 1845, p. 228.**Hauera americana** Unger.

1833 Dicotyledonous wood: Witham, p. 67, pl. XVI, f. 14.

1845 *Hauera americana* Unger, p. 228.

1850 *Hauera americana* Unger: Unger, p. 426.

1857a *Hauera americana* Unger: Unger, p. 17, pl. IV, f. 6, 7.

1882 *Hauera americana* Unger: Felix, p. 68.

1890 *Hauera americana* Unger: Kaiser, p. 30.

1894 *Hauera americana* Unger: Felix, p. 98.

Remarks: Referred by Unger to the *Aquilarineae*. Schenk (1890, p. 900) suggests a comparison with the *Caesalpineae*, and Felix (1894) with the *Aurantiaceae*.

Occurrence: Tertiary; Antigua, Mexico.

**Hauera bornensis** Engelhardt.

1870 *Hauera bornensis* Engelhardt, p. 49, pl. XV, f. 10—13.

Occurrence: Miocene; Saxony (Borna).

**Hauera stiriaca** Unger.

1845 *Hauera stiriaca* Unger, p. 229.

1850 *Hauera stiriaca* Unger: Unger, p. 426.

1857a *Hauera stiriaca* Unger: Unger, p. 17, pl. IV, f. 4, 5.

1882 *Hauera stiriaca* Unger: Felix, p. 68.

1890 *Hauera stiriaca* Unger: Kaiser, p. 30.

Occurrence: Miocene; Styria.

**Helictoxylon** Felix, 1882, p. 41.**Helictoxylon anomalum** Felix.

1883 *Helictoxylon anomalum* Felix, p. 66, pl. II, f. 4; III, f. 9.

1884 *Helictoxylon anomalum* Felix: Felix, p. 35.

1889 *Helictoxylon anomalum* Felix: Staub, p. 190.

1890 *Helictoxylon anomalum* Felix: Kaiser, p. 38.

Remarks: A liane of uncertain systematic position.

Occurrence: Tertiary; Hungary (Tapolcsan).

***Helictoxylon luzonense* Crié.**

1889 *Helictoxylon luzonense* Crié, p. 87, pl. IX (XVII), f. 5—6.

Occurrence: Tertiary; Philippines (Luzon, Manilla, S. Juan del Monte).

***Helictoxylon roemeri* Felix.**

1882 *Helictoxylon roemeri* Felix, p. 40.

1883a *Helictoxylon roemeri* Felix: Felix, p. 20, pl. III, f. 3, 7.

1883 *Helictoxylon roemeri* Felix: Hofmann, p. 92.

1890 *Helictoxylon roemeri* Felix: Kaiser, p. 38.

Remarks: Liane. Original in Munich Mus.

Occurrence: Probably Tertiary; Galicia (Tarnow), Mecklenburg ?

***Helictoxylon schenki* Felix.**

1882 *Helictoxylon schenki* Felix, p. 62.

1883a *Helictoxylon schenki* Felix: Felix, p. 20, pl. III, f. 4, 5.

1890 *Helictoxylon schenki* Felix: Kaiser, p. 39.

1930 *Helictoxylon schenki* Felix: Schönfeld, p. 124.

Remarks: A silicified liane, which Schönfeld refers to the *Ternstroemiaceae*, and compares with *Ruyschioxylon* from Sumatra.

Occurrence: Tertiary; Java.

***Helictoxylon speciosum* Felix.**

1882 *Helictoxylon speciosum* Felix, p. 66, pl. I, f. 1.

1883a *Helictoxylon speciosum* Felix: Felix, p. 18, pl. III, f. 2, 8.

1883 *Helictoxylon speciosum* Felix: Hofmann, p. 92.

Remarks: Silicified liane of uncertain affinity.

Occurrence: Tertiary; Antigua, ? Mecklenburg.

***Helictoxylon tenerum* Felix.**

1882 *Helictoxylon tenerum* Felix, p. 67.

1883a *Helictoxylon tenerum* Felix: Felix, p. 19, pl. III, f. 1, 6.

1890 *Helictoxylon tenerum* Felix: Kaiser, p. 39.

Remarks: Silicified liane, affinities uncertain.

Occurrence: Tertiary; Antigua.

***Helictoxylon wilcoxianum* Berry.**

1922 *Helictoxylon wilcoxianum* Berry, p. 18, pls. XVII, XVIII.

Occurrence: Eocene (Wilcox); Louisiana (Naborton).

***Helictoxylon* sp.**

1882 *Helictoxylon* sp.: Hofmann, p. 92.

Remarks: Perhaps *H. speciosum* Felix.

Occurrence: Locality and horizon unknown. (Rostock Museum).

***Hippocrateoxylon* Hofmann, 1884, p. 179.**

***Hippocrateoxylon javanicum* Hofmann.**

1884 *Hippocrateoxylon javanicum* Hofmann, p. 179.

1890 *Hippocrateoxylon javanicum* Hofmann: Kaiser, p. 28.

1930 *Hippocrateoxylon javanicum* Hofmann: Schönfeld, p. 124.

Remarks: Silicified liane, compared with *Hippocratea scandens* and *H. viridis*. Original in Utrecht Univ. Coll.

Occurrence: Tertiary; Java (near Indramaju).

### **Hythia** Stopes 1915, p. 277.

#### **Hythia elgari** Stopes.

1915 *Hythia elgari* Stopes, p. 278, pls. XXIX, XXX; text-fig. 85, 86.

Remarks: Affinities uncertain (? cf. *Fagus*). Originals in Geol. Dept., Brit. Mus. (Nat. Hist.).

Occurrence: Lower Cretaceous (Aptian); England (Kent).

### [**Jordania** Schenk, 1880.]

Remarks: Non *Jordania* Fiedler, Nova Acta, XXVI, 1857, p. 239; non *Jordania* Boissier 1849. See *Ebenoxylon ebenoides* (Schenk) and *E. tunetanum* (Fliche).

### **Juglandinium** Unger, 1845, p. 241.

Remarks: The diagnosis was emended by Kraus (1882) who used the names *Juglandinium* and *Juglandoxyton* indifferently.

#### **Juglandinium longiradiatum** Vater.

1884 *Juglandinium longiradiatum* Vater, p. 841, pl. XXVIII, f. 15, 16.

1890 *Juglandinium longiradiatum* Vater: Kaiser, p. 14.

Occurrence: Lower Senonian; Germany (Harzburg).

#### **Juglandinium mediterraneum** Unger.

1845 *Juglandinium mediterraneum* Unger, p. 241.

1850 *Juglandinium mediterraneum* Unger: Unger, p. 472.

1852 *Juglandinium mediterraneum* Unger: Prokesch-Osten & Unger, p. 857.

1874 *Juglandinium mediterraneum* Unger: Schimper, p. 253.

1882 cf. *Juglandinium mediterraneum* Unger: Kraus, p. 5.

1882c cf. *Juglandinium mediterraneum* Unger: Kraus, p. 91.

1889 *Juglandinium mediterraneum* Unger: Staub, p. 189.

1890 *Juglandinium mediterraneum* Unger: Kaiser, p. 15.

1893 "*Juglandoxyton mediterraneum* Kraus": Meschinelli & Squinabol, p. 244.

1898 *Juglandinium mediterraneum* Unger: Fliche, p. 302.

Remarks: As Unger's wood was insufficiently described and not figured at all, Kraus hesitated to identify his Sicilian wood with it, but he did not make a new species. On p. 80 Kraus (1882c) refers to his wood as *Juglandoxyton*, on p. 87 as *Juglans*, and on p. 91 as "*Juglandinium* or *Juglandoxyton*". Nagel (1915, p. 65) includes *Mirbellites lesbuis* Unger as a synonym of this species.

Occurrence: Tertiary; Mytilene, Hungary (Neugrad), ? Sicily (Sulphur beds of Girgenti).

#### **Juglandinium schenki** Felix.

1884 *Juglandinium schenki* Felix, p. 30, pl. II, f. 1—3.

1889 *Juglandinium schenki* Felix: Staub, p. 189.

1890 *Juglandinium schenki* Felix: Kaiser, p. 15.

Remarks: Original in Min. Mus. Leipzig.

Occurrence: Tertiary; Hungary.

***Juglandinium triebelii* (Caspary) Nagel.**

1888 *Juglans triebelii* Caspary, p. 42.

1889 *Juglans triebelii* Caspary: Caspary, p. 50, pl. IX, f. 12, 13; X, f. 1—9.

1890 *Juglans triebelii* Caspary: Kaiser, p. 15.

1915 *Juglandinium triebelii* (Caspary) Nagel, p. 65.

Remarks: Compared with *Pterocarya caucasica*. Originals in Mus. Bot. Gart., Königsberg. Schuster (1908, p. 150) compares it with *Juglans australis*.

Occurrence: ? Tertiary; Prussia (? Elbing).

***Juglandinium wichmanni* (Hofmann).**

1884 *Juglandoxylon wichmanni* Hofmann, p. 187 (36).

1890 *Juglandoxylon wichmanni* Hofmann: Kaiser, p. 15.

Occurrence: Locality and horizon unknown. (Utrecht Univ. Coll.).

***Juglandinium zuriense* (Falqui).**

1906 *Juglansoxylon zuriensis* Falqui, p. 26, pl. I, f. 2.

Occurrence: Miocene; Sardinia.

***Juglandinium* sp.**

1884 *Juglandinium* sp.: Vater, p. 842.

1890 *Juglandinium* sp.: Kaiser, p. 15.

Occurrence: Lower Senonian; Brunswick (Helmstedt).

**? *Juglandinium* sp.**

1888 *Carya*: Dawson, p. 33.

Remarks: No figures nor description. Requires confirmation.

Occurrence: Upper Cretaceous (Fort Pierre Series); Western Canada (Head of Swift Current).

***Juglandinium* ? sp.**

1930a *Juglandinium*?: Schönfeld, p. 70.

Occurrence: Oligocene; Saxony (Deutzen).

[***Juglandoxylon* Kraus, 1882c, p. 80.]**

Synonym of ***Juglandinium***.

[***Juglans triebelii* Caspary.]**

Synonym of ***Juglandinium triebelii***, q. v.

[***Juglansoxylon* Falqui, 1906.]**

Synonym of ***Juglandinium***, q. v. for ***J. zuriense***.

***Jugloxyton* Stöpes & Fujii, 1910, p. 62.**

***Jugloxyton hamoanum* Stöpes & Fujii.**

1910 *Jugloxyton hamoanum* Stöpes & Fujii, p. 62, pl. VII, f. 48.

Remarks: Affinities uncertain. Does not appear to resemble *Juglans* very closely, in spite of the suggestion embodied in the name.

Occurrence: Upper Cretaceous; Japan (Hokkaido).

[**Junghuhnites** Goeppert, 1854, p. 54.][**Junghuhnites javanicus** Goeppert.]1854 *Junghuhnites javanicus* Goeppert, p. 54, pl. II, f. 11—16.1890 *Junghuhnites javanicus* Goeppert: Kaiser, p. 55.

Remarks: Kräusel (1925, p. 333) suggested that this wood might be Dipterocarpaceous, but later (1926, p. 1) decided that it was quite unidentifiable. The originals appear to be lost.

Occurrence: Tertiary; Java.

**Klippsteinia** Unger, 1845, p. 234.**Klippsteinia medullaris** Unger.1845 *Klippsteinia medullaris* Unger, p. 234.1850 *Klippsteinia medullaris* Unger: Unger, p. 448.1857 *Klippsteinia medullaris* Unger: Unger, p. 12, pl. III, f. 8—10.1890 *Klippsteinia medullaris* Unger: Kaiser, p. 25.1894 *Klippsteinia medullaris* Unger: Felix, p. 98.

Remarks: Referred by Unger to the *Aurantiaceae*. Schenk (1890, p. 899) remarks that a similar structure is also to be found in the *Celastraceae*. Felix (1894) doubts the reference to the *Aurantiaceae*.

Occurrence: Tertiary; Austria (Thal near Graz).

[**Kloedenia** Goeppert, 1839.][**Kloedenia quercoides** Goeppert.]

Synonym of *Quercinium quercoides*, q. v.

**Laurinium** Unger, 1845, p. 227.

Remarks: Felix (1886, p. 490 and 1887a, p. 156) attempted to divide Unger's genus into two: (a) *Laurinium* s. str., in which there are no secretory canals in the rays, and (b) *Perseoxylon*, secretory canals present in the rays. The latter included species which Felix had previously named *Laurinoxylon* (1883). Vater (1884) reverted to *Laurinium* and emended Unger's diagnosis. Knoblauch, followed by Schuster and Gothan, pointed out that the presence of secretory canals was by no means confined to *Persea* among recent *Lauraceae*, and Knoblauch (quoted by Schuster) concluded that lauraceous genera could not be distinguished by their wood anatomy. Nevertheless Schuster (1908, 1909) endeavoured to distinguish certain woods under the name *Ocoteoxylon*, but Gothan does not consider that this is justifiable.

Gothan (followed by Kräusel) rejects the name *Laurinium* in favour of *Laurinoxylon*, on what seem to me inadequate grounds.

**Laurinium albiense** (Fliche).1905 *Laurinoxylon albiense* Fliche, p. 356, pl. X, f. 2, 3.

Occurrence: Alban; Madagascar.

**Laurinium algovicum** (Schuster).1909 *Ocoteoxylon algovicum* Schuster, p. 55.

Remarks: Compared with the recent genus *Ocotea*, but Gothan (1908, p. 18) doubts whether the separation of *Ocoteoxylon* from *Laurinium* is justifiable. Cf. *Laurinium* (*Ocoteoxylon*) *tigurinum*.

Occurrence: Upper Oligocene; Bavaria (Algäu).

**Laurinium antiquum (Felix).**

1887 *Perseoxylon antiquum* Felix, p. 153, pl. XXVIIa, f. 1—4.

1889 *Perseoxylon antiquum* Felix: Staub, p. 189.

1890 *Perseoxylon antiquum* Felix: Kaiser, p. 22.

Remarks: Compared with *Laurus obtusifolia* in transverse section.

Occurrence: ? Cretaceous (? Carpathian Sandstone); Hungary (Kristyor).

**Laurinium aromaticum (Felix).**

1884 *Laurinoxylon aromaticum* Felix, p. 27, pl. I, f. 7; II, f. 7, 9.

1886 *Perseoxylon aromaticum* (Felix) Felix, p. 490.

1887a *Perseoxylon aromaticum* (Felix): Felix, p. 157.

1889 *Laurinoxylon aromaticum* Felix: Staub, p. 189.

1890 *Perseoxylon aromaticum* (Felix): Kaiser, p. 22.

1894 *Perseoxylon aromaticum* (Felix): Felix, p. 101.

1896 *Perseoxylon aromaticum* (Felix): Felix, p. 254.

1899 *Perseoxylon aromaticum* (Felix): Knowlton, p. 767.

Remarks: Original in Mus. Pal. Berlin.

Occurrence: Tertiary; Hungary.

Miocene; Yellowstone National Park (Yanceys).

**Laurinium bakeri (Berry).**

1924 *Laurinoxylon bakeri* Berry, p. 83, pls. XVII—XX.

Remarks: Compared with *L. wilcoxianum*, and stated to represent either *Cinnamomum*, *Persea*, *Oreodaphne* or *Nectandra*. Type in U. S. Nat. Mus.

Occurrence: Eocene (Yegua); Texas.

**Laurinium biseriatum (Caspary).**

1888 *Laurus biseriata* Caspary, p. 43.

1889 *Laurus biseriata* Caspary: Caspary, p. 54, pl. X, f. 10—17; XI, f. 1—5.

1890 *Laurus biseriata* Caspary: Kaiser, p. 21.

1908 *Laurus biseriata* Caspary: Schuster, p. 144.

Remarks: Compared with *Laurus sassafras* and *Dicypellium caryophyllatum*. Original in Mus. Bot. Gart., Königsberg.

Occurrence: Tertiary; Prussia.

**Laurinium brandonianum (Jeffrey & Chrysler).**

1906 *Laurinoxylon brandonianum* Jeffrey & Chrysler, p. 198, pl. XLIX, f. 1—6.

Occurrence: Eocene; Vermont (Brandon).

**Laurinium branneri (Knowlton).**

1891 *Laurinoxylon branneri* Knowlton, p. 256, pl. IX, f. 8, 9; X, f. 1, 2; XI, f. 4.

1907 *Laurinoxylon branneri* Knowlton: Penhallow, p. 98, f. 6—8.

1916 *Laurinoxylon branneri* Knowlton: Berry, p. 314, pl. XVI, f. 6—10.

1922 *Laurinoxylon branneri* Knowlton: Berry, p. 19.

1924 *Laurinoxylon branneri* Knowlton: Berry, p. 84, pl. XXI, and p. 188.

Remarks: Compared by Knowlton with *L. biseriatum* (Caspary).

Occurrence: Eocene (Yegua); Texas (Somerville).

Eocene (Jackson); Arkansas.

Eocene (Wilcox); Louisiana (Shreveport).

**Laurinium brunswicense** Vater.1884 *Laurinium brunswicense* Vater, p. 845, pl. XXIX, f. 22—24.1887a *Laurinium brunswicense* Vater: Felix, p. 157.1890 *Laurinium brunswicense* Vater: Kaiser, p. 21.1908 *Laurinium brunswicense* Vater: Schuster, p. 144.Remarks: Compared with *Laurus nobilis*.

Occurrence: Lower Senonian (derived from); Brunswick (Helmstedt).

**Laurinium californicum** (Platen).1908 *Perseoxylon californicum* Platen, p. 52.

Occurrence: Tertiary; California.

**Laurinium desioi** (Chiarugi).1929 *Laurinoxylon desioi* Chiarugi, p. 423, pl. XLVII, f. 1—3.1929a *Laurinoxylon desioi* Chiarugi: Chiarugi, p. 558.

Occurrence: Miocene; Libyan desert (Giarabub), Sirtica.

**Laurinium diluviale** (Unger).1842 *Ulmium diluviale* Unger, p. 101.1842a *Ulmium diluviale* Unger: Unger, p. 174.1845 *Ulmium diluviale* Unger: Unger, p. 219.1847 *Ulmium diluviale* Unger: Unger, p. 97, pl. XXV, f. 6—9.1850 *Ulmium diluviale* Unger: Unger, p. 412.1868 *Ulmium diluviale* Unger: Cramer, p. 175.1872 *Ulmium diluviale* Unger: Schimper, p. 724.1882 *Betulium diluviale* (Unger) Felix, p. 40.1883 *Laurinoxylon diluviale* (Unger) Felix, p. 59, pl. II, f. 1, 3; III, f. 1.1884 *Laurinoxylon diluviale* (Unger): Felix, p. 28.1886 *Perseoxylon diluviale* (Unger) Felix, p. 490.1887a *Perseoxylon diluviale* (Unger): Felix, p. 157.1890 *Perseoxylon diluviale* (Unger): Kaiser, p. 23.1890 *Betuloxylon diluviale* (Unger) Lakowitz, p. 29.

Remarks: Conwentz (1868) and Kaiser (1879) had already expressed doubts as to the correctness of Unger's ascription of this wood, and Felix at first, following Cramer's suggestion, renamed it *Betulium*, but after an examination of some of the original material he identified it as lauraceous. (See also remarks on *Betulium* sp. from Cracow).

In spite of Felix's work, Lakowitz (1890) refers to it as *Betuloxylon diluviale*, and then states that he does not consider it to be a birch wood!

Felix stated that the wood closely resembled that of the recent *Persea gratissima* Gaertn., and later he included it in his genus *Perseoxylon*. Gothan and others doubt the possibility of distinguishing different genera of the *Lauraceae* by the characters of the wood, a view which has been adopted here, so that this species becomes *Laurinium diluviale* (Unger).

Occurrence: Tertiary; Bohemia (Joachimsthal).

**Laurinium eberi** (Platen).1908 *Perseoxylon eberi* Platen, p. 135.

Occurrence: Tertiary (Miocene?); Colorado (Bijou Basin).

**Laurinium guatemalense Unger.**

1850 *Laurinium guatemalense* Unger, p. 425.

1887a *Laurinium guatemalense* Unger: Felix, p. 157.

1890 *Laurinium guatemalense* Unger: Kaiser, p. 21.

1908 *Laurinium guatemalense* Unger: Schuster, p. 143.

Remarks: Included in *Laurinium* with a query by Felix.

Occurrence: ? Tertiary; Guatemala (Rio Payres).

**Laurinium haasi Wetzel.**

1913 *Laurinium haasi* Wetzel, p. 21, pl. I.

Occurrence: ? Upper Cretaceous; Germany (Holtenau).

**Laurinium lesquerianum (Knowlton).**

1891 *Laurinoxylon lesqueriana* Knowlton, p. 258, pl. X, f. 3, 4; XI, f. 3, 4.

1924 *Laurinoxylon lesqueriana* Knowlton: Berry, p. 85.

Remarks: Originals in U. S. Nat. Mus.

Occurrence: Eocene (Yegua); Arkansas.

**Laurinium meyeri Felix.**

1886 *Laurinium meyeri* Felix, p. 488, pl. XII, f. 4, 7, 8.

1887a *Laurinium meyeri* Felix: Felix, p. 157.

1890 *Laurinium meyeri* Felix: Kaiser, p. 21.

1908 *Laurinium meyeri* Felix: Schuster, p. 143.

Remarks: Originals in Min. Mus. Dresden. Recorded as lauraceous wood, on the identification of Conwentz, by Frentzel (Min. Mitt., 1877, p. 308).

Occurrence: Tertiary; New Guinea (Astrolabe Bay).

**Laurinium nectandrioides (Kräusel & Schönfeld).**

1924 *Laurinoxylon nectandrioides* Kräusel & Schönfeld, p. 272, pl. XXII, f. 19—21; text-fig. 9—17.

Remarks: Agrees closely with the wood of *Nectandra*. Probably the same as the wood referred to by Schönfeld (1925, p. 19) as cf. *Nectandra*.

Occurrence: Miocene; Holland (S. Limburg).

**Laurinium perseoides (Caspary).**

1888 *Laurus perseoides* Caspary, p. 43.

1889 *Laurus perseoides* Caspary: Caspary, p. 67, pl. XII, f. 6—11; XIII, f. 1—5.

1890 *Laurus perseoides* Caspary: Kaiser, p. 21.

Remarks: Compared with *Persea gratissima*. Original in Mus. Bot. Gart., Königsberg.

Occurrence: Tertiary; Prussia (Palmnicken).

**Laurinium primigenium (Schenk) Felix.**

1883 *Laurinoxylon primigenium* Schenk, p. 11, pl. III, f. 10; V, f. 15, 16.

1884 *Laurinoxylon primigenium* Schenk: Felix, p. 28.

1887a *Laurinium primigenium* (Schenk) Felix, p. 157.

1890 *Laurinoxylon primigenium* Schenk: Kaiser, p. 22.

1908 *Laurinoxylon primigenium* Schenk: Schuster, p. 143.

Remarks: Kaiser suggests a similarity to the wood of the *Rubiaceae*. Schuster doubts whether it is lauraceous.

Occurrence: Oligocene ?; Egypt (near Cairo).

### *Laurinium pulchrum* (Knowlton).

1899 *Laurinoxylon pulchrum* Knowlton, p. 765, pl. CXVI, CXIX, f. 3—5, CXX, f. 1.

1908 *Laurinoxylon pulchrum* Knowlton: Platen, p. 127.

Occurrence: Miocene; Yellowstone National Park.

### *Laurinium radiatum* Schönfeld.

1919 *Laurinium radiatum* Schönfeld, p. 3, pl. I, f. 1—6.

Remarks: Compared with *L. tigurinum* (Schuster), and also with *Carpinoxylon pfefferi* Platen, which, it is suggested, may possibly be lauraceous.

Occurrence: Tertiary; Dresden.

### *Laurinium tigurinum* (Schuster).

1908 *Ocoteoxylon tigurinum* Schuster, p. 139, pl. II.

1919 *Ocoteoxylon tigurinum* Schuster: Schönfeld, p. 8.

Remarks: Gothan (1908, p. 18) does not consider that the separation of *Ocoteoxylon* from *Laurinium* is justified. It seems better to use the more comprehensive form-genus, though this species may, as Schuster claims, show points of contact with the recent *Ocotea*. Among fossils it is near *L. biseriatum*.

Occurrence: Eocene (Flysch); Tegernsee.

### *Laurinium triseriatum* (Caspary).

1888 *Laurus triseriata* Caspary, p. 43.

1889 *Laurus triseriata* Caspary: Caspary, p. 60, pl. XI, f. 6—12; XII, f. 1—5.

1890 *Laurus triseriata* Caspary: Kaiser, p. 22.

Remarks: Compared with *Laurus nobilis* and *Mithridatea erecta*. Original in Mus. Bot. Gart., Königsberg.

Occurrence: Tertiary; Prussia.

### *Laurinium uniseriatum* (Gothan).

1908 *Laurinoxylon uniseriatum* Gothan, p. 16, pl. II, f. 3—11.

1924 *Laurinoxylon "uniradiatum"* Gothan: Kräusel, p. 25, pl. IV, f. 1—4.

Remarks: Kräusel's specific name is presumably a mistake for *L. uniseriatum*.

Occurrence: Upper Cretaceous or Tertiary; Antarctica (Seymour Island).

Tertiary; Patagonia.

### *Laurinium wilcoxianum* (Berry).

1922 *Laurinoxylon wilcoxianum* Berry, p. 19, pl. XIII.

Remarks: The statement that this species was present in the Yegua of Texas probably refers to the later described *L. bakeri* Berry.

Occurrence: Eocene (Wilcox); Louisiana (Naborton), Missouri (Dabnez), Tennessee (Bolivar).

**Laurinium xyloides Unger.**

- 1845 *Laurinium xyloides* Unger, p. 228.  
 1850 *Laurinium xyloides* Unger: Unger, p. 425.  
 1887a *Laurinium xyloides* Unger: Felix, p. 157.  
 1890 *Laurinium xyloides* Unger: Kaiser, p. 22.  
 1893 *Lauroxylon xyloides* (Unger) Meschinelli & Squinabol, p. 303.  
 1908 *Laurinium xyloides* Unger: Schuster, p. 143.

Remarks: Schuster states that this species is insufficiently described. Felix includes it in *Laurinium* with a query.

Occurrence: Pliocene: Italy (Vicentino).

**Laurinium sp.**

- 1857 *Laurus* sp.: Meneghini, pp. 439, 548.  
 1893 *Lauroxylon* sp.: Meschinelli & Squinabol, p. 303.  
 Remarks: Compared with *Laurus benzoin*.  
 Occurrence: Tertiary; Sardinia.

**Laurinium sp.**

- 1891 *Laurinoxylon*?: Knowlton, p. 259.  
 1924 *Laurinoxylon*? sp. Knowlton: Berry, p. 188.  
 Remarks: Very poorly preserved. Original in U. S. Nat. Mus.  
 Occurrence: Eocene; Arkansas (Red Bluff).

**Laurinium ? sp.**

- 1908 *Laurinoxylon*? sp.: Gothan, p. 19, pl. II, f. 12, 13.  
 Occurrence: ? Upper Cretaceous or Tertiary; Antarctica (Seymour Island).

**Laurinium sp.**

- 1930a *Laurinium*: Schönfeld, p. 70.  
 1930a *Perseoxylon*: Schönfeld, p. 70.  
 Occurrence: Oligocene; Saxony (Ragewitz, Flöz, Quatitz).

**[Laurinoxylon Felix, 1883, p. 59.]**

Synonym of *Laurinium*, q. v. for all species described under *Laurinoxylon*.

**[Lauroxylon Schenk, 1890, p. 899.]**

Synonym of *Laurinium*, q. v.

**Lillia Unger, 1842, p. 102.****Lillia viticulosa Unger.**

- 1842 *Lillia viticulosa* Unger, p. 102.  
 1842a *Lillia viticulosa* Unger: Unger, p. 178.  
 1845 *Lillia viticulosa* Unger: Unger, p. 263.  
 1845 *Lillia viticulosa* Unger: Corda, p. 49, pl. LX, f. 1—3.  
 1850 *Lillia viticulosa* Unger: Unger, p. 477.  
 1883 *Lillia viticulosa* Unger: Felix, p. 64.  
 1884 *Lillia viticulosa* Unger: Felix, p. 33, pl. IV, f. 5, 6.  
 1889 *Lillia viticulosa* Unger: Staub, p. 189.

1890 *Lillia viticulosa* Unger: Kaiser, p. 23.

1911 *Lillia viticulosa* Unger: Schuster, p. 540.

1930 *Lillia viticulosa* Unger: Schönfeld, p. 124.

Remarks: Corda suggested an affinity with the *Zygophyllaceae*, but Felix pointed out the close resemblance of this liane to *Coscintum fenestratum* and put it in the *Menispermaceae*. Originals in Nat. Mus. Vienna and Geol. Mus. Dresden.

Occurrence: Tertiary; Hungary (Rauca, Gyepűfüzes).

### **Liquidambaroxylon Felix, 1884, p. 24.**

#### **Liquidambaroxylon lecointreae (Houlbert).**

1910 *Ambaroxylon lecointreae* Houlbert, p. 74, pl. VII, f. 17—20.

Remarks: Closely compared with *Liquidambar*, and therefore falling within Felix's form-genus.

Occurrence: Middle Miocene; Touraine.

#### **Liquidambaroxylon speciosum Felix.**

1884 *Liquidambaroxylon speciosum* Felix, p. 24, pl. III, f. 2—4; IV, f. 4.

1889 *Liquidambaroxylon speciosum* Felix: Staub, p. 139.

1890 *Liquidambaroxylon speciosum* Felix: Kaiser, p. 29.

Remarks: Felix puts this species very close to *Liquidambar styriaciflua*. Schenk (1890, p. 903) says "Bei *Liquidambaroxylon* vermisste ich die in dem primären Holze vorkommenden Secretgänge". Originals in Mus. Ungar. Geol. Reichsanst.

Occurrence: Tertiary; Hungary (Medgyaszó).

### **Magnolia L.**

[*Magnolia laxa* Caspary.]

See *Dryoxylon laxum*.

[*Magnolites* Tuzson, 1909.]

[*Magnolites silvatica* Tuzson.]

See *Dryoxylon silvaticum*.

### **Meyenites Unger, 1842, p. 102.**

#### **Meyenites aequimontanus Unger.**

1842 *Meyenites aequimontanus* Unger, p. 102.

1842a *Meyenites aequimontanus* Unger: Unger, p. 177.

1845 *Meyenites aequimontanus* Unger: Unger, p. 261.

1850 *Meyenites aequimontanus* Unger: Unger, p. 522.

1854 *Meyenites aequimontanus* Unger: Unger, p. 183, pl. VII, f. 4—6.

1890 *Meyenites aequimontanus* Unger: Kaiser, p. 35.

Occurrence: Miocene; Styria (Gleichenberg).

#### **[Miquelites Goeppert.]**

[*Miquelites elegans* Goeppert.]

1854 *Miquelites elegans* Goeppert, p. 56, pl. I, f. 6, 7, 7a.

1890 *Miquelites elegans* Goeppert: Kaiser, p. 35.

Remarks: Kräusel states (1926) that although this wood shows some resemblance to that of the *Dipterocarpaceae*, it must be regarded as quite unidentifiable.

Occurrence: Tertiary; Java.

**Mirbellites** Unger, 1845, p. 241.

**Mirbellites lesbius** Unger.

1845 *Mirbellites lesbius* Unger, p. 242.

1850 *Mirbellites lesbius* Unger: Unger, p. 472.

1852 *Mirbellites lesbius* Unger: Prokesch-Osten & Unger, p. 857.

1890 *Mirbellites lesbius* Unger: Kaiser, p. 15.

1898 *Mirbellites lesbius* Unger: Fliche, p. 302.

Remarks: Referred by Unger to the *Juglandaceae*. Nagel (1915, p. 65) includes it in the synonymy of *Juglandinium mediterraneum*, but there is no evidence in favour of this.

Occurrence: Tertiary; Lesbos.

**Mirbellites schuchii** Unger.

1850 *Mirbellites schuchii* Unger, p. 473.

1890 *Mirbellites schuchii* Unger: Kaiser, p. 16.

Occurrence: Horizon and locality unknown.

**Mohlites** Unger, 1842, p. 101.

**Mohlites cribrosus** Unger.

1842 *Mohlites cribrosus* Unger, p. 101.

1842a *Mohlites cribrosus* Unger: Unger, p. 176.

1845 *Mohlites cribrosus* Unger: Unger, p. 265.

1850 *Mohlites cribrosus* Unger: Unger, p. 525.

1889 *Mohlites cribrosus* Unger: Staub, p. 191.

1890 *Mohlites cribrosus* Unger: Kaiser, p. 32.

Occurrence: Tertiary; Hungary (Libethen).

**Mohlites parenchymatosus** Unger.

1842 *Mohlites parenchymatosus* Unger, p. 101.

1842a *Mohlites parenchymatosus* Unger: Unger, p. 176.

1845 *Mohlites parenchymatosus* Unger: Unger, p. 265.

1847 *Mohlites parenchymatosus* Unger: Unger, p. 3, pl. I, f. 3a.

1850 *Mohlites parenchymatosus* Unger: Unger, p. 525.

1854 *Mohlites parenchymatosus* Unger: Unger, p. 182, pl. VI, f. 14—16.

1890 *Mohlites parenchymatosus* Unger: Kaiser, p. 32.

Remarks: Referred by Unger to the *Leguminosae*. The figure in Chloris Protogaea (1847) is in illustration of a fungus (*Nyctomyces antediluvianus*) with which the wood was infested.

Occurrence: Miocene; Styria (Gleichenberg).

**Nectandra** Roland.

See *Laurinium nectandrioides*.

**Nicolia** Unger, 1842, p. 102.

**Nicolia aegyptiaca** Unger.

1842 *Nicolia aegyptiaca* Unger, p. 102.

1842a *Nicolia aegyptiaca* Unger: Unger, p. 177.

1845 *Nicolia aegyptiaca* Unger: Unger, p. 262.

- 1847 (Fossil wood): Unger, pl. I, f. 7.  
 1850 *Nicolia aegyptiaca* Unger: Unger, p. 523.  
 1859 *Nicolia aegyptiaca* Unger: Unger, p. 213, pl. I, f. 1, 2.  
 1866 *Nicolia aegyptiaca* Unger: Unger, p. 289, pl. I, f. 1—7.  
 1870 *Nicolia aegyptiaca* Unger: Carruthers, p. 307, pl. XIV, f. 3, 4.  
 1880 *Nicolia aegyptiaca* Unger: Schenk, p. 657.  
 1883 *Nicolia aegyptiaca* Unger: Schenk, p. 8, pl. III, f. 7—9; IV, f. 11.  
 1884a *Nicolia wiedemanni* Hofmann, p. 483, pl. III, f. 1.  
 1885 *Nicolia aegyptiaca* Unger: Quenstedt, p. 1175, pl. C, f. 49.  
 1888 *Nicolia aegyptiaca* Unger: Schenk, pp. 19, 23.  
 1890 *Nicolia aegyptiaca* Unger: Kaiser, p. 31.  
 1890 *Nicolia wiedemanni* Hofmann: Kaiser, p. 36.  
 1890 *Nicolia aegyptiaca* Unger: Lange, p. 673.  
 1893 *Nicolia aegyptiaca* Unger: Thomas, pp. 3, 4.  
 1901 *Nicolia aegyptiaca* Unger: Blanckenhorn, pp. 98, 102.  
 1910 *Nicolia aegyptiaca* Unger: Schuster, pp. 5—8, pl. II, f. 9—11; III, f. 13—15.  
 1925 *Nicolia aegyptiaca* Unger: Edwards, p. 171.  
 1929 *Nicolia aegyptiaca* Unger: Chiarugi, p. 410, pl. XLV, f. 5; XLVI, f. 1, 3, 5; text-fig. 38, 39, 41, 46.

Remarks: For discussions on the modes of occurrence and fossilization as well as the distribution of *Nicolia* and other woods of the so-called "petrified forests" of Egypt, see, in addition to papers above: Schweinfurth (1882), Kuntze (1895), Barron (1905) and Stromer (1924).

Nicol (1835) mentions dicotyledonous wood from Egypt, some of which, as is shown from an examination of his original specimens in the British Museum (Nat. Hist.) can be identified as *Nicolia aegyptiaca*.

Unger (1847) figured a fungus (*Nyctomyces entoxylinus*) in a dicotyledonous wood from Asserac, Egypt, which he afterwards stated was *N. aegyptiaca* (1859, p. 221).

The figures given by Quenstedt (1885) of a specimen from near Cairo are poor and unrecognizable.

The record by Lange from the Lower Senonian of Aix-la-Chapelle (no figures) requires confirmation.

Schuster includes *N. wiedemanni* Hofmann in *N. aegyptiaca*, and Chiarugi follows this.

Schuster considers that pitted elements figured by Schacht (Ann. Sci. Nat. Bot., XIII, 1860) as "*lignum Leguminosarum fossilium*" (no locality stated) must have belonged to *N. aegyptiaca*.

Occurrence: (See map given by Chiarugi, 1929).

Upper Cretaceous (Nubian Sandstone); Libyan Desert (near Regenföld).

? Lower Senonian; ? Aix-la-Chapelle.

Eocene (Daban Beds); British Somaliland.

Oligocene; Egypt (near Cairo and various other localities).

Miocene; Libyan Desert (Moghara; Wadi Faregh; between Fayum and Baharia; Giarabub).

Pliocene; Egypt (Wadi Natrun, Garet Muluk) [Stromer (1924, p. 20) thinks this wood may have been derived from the Lower Miocene].

Tunisia (Ain Cherichira and Bled-Douara).

Tertiary (horizon uncertain); Abyssinia (Wadla, Woro, Haimano); Italian Somaliland, West coast of Africa near Huissi Aissa.

### *Nicolia caledonica* Crié.

- 1889 *Nicolia caledonica* Crié, p. 81, pl. V (XIII), f. 1, 2; VI (XIV), f. 1—8.

Occurrence: ? Pliocene; New Caledonia (Ducos I.).

[*Nicolia minor* Hofmann.]

Synonym of *Caesalpinioxylon oweni* (Carr.), q. v.

*Nicolia giarabubensis* Chiarugi.

1929 *Nicolia giarabubensis* Chiarugi, p. 418, pl. XLV, f. 6; XLVI, f. 2, 4, 6.

Occurrence: Miocene; Libyan Desert (Giarabub).

*Nicolia moresneti* Hovelacque.

1888 *Aachenosaurus multident* Smets, pars. [Not seen].

1890 *Nicolia moresneti* Hovelacque, p. 63, pl. III, f. 2; text-fig. 2—8.

Remarks: See remarks on *Aachenoxylon multident*. Compared by Hovelacque with the *Piperaceae*.

Occurrence: Upper Cretaceous; Belgium (Moresnet).

[*Nicolia oweni* Carruthers.]

Synonym of *Caesalpinioxylon oweni*, q. v.

[*Nicolia tunetana* Crié.]

1889 *Nicolia tunetana* Crié, p. 81 (footnote).

Remarks: Nomen nudum.

Occurrence: Pliocene; Tunis.

[*Nicolia wiedemanni* Hofmann.]

Synonym of *N. aegyptiaca*, q. v.

*Nicolia zelandica* Unger.

1864 *Nicolia zelandica* Unger, p. 13, pl. V, f. 2a—b.

Remarks: Schenk (1890, p. 901) doubts whether the generic attribution of this wood is correct.

Occurrence: Tertiary; New Zealand (Hunua Range).

*Nicolia* ? sp.

1888 *Nicolia* ? : Fliche, p. 571.

Remarks: Cf. the record of *N. aegyptiaca* in Thomas (1893).

Occurrence: Tertiary; Tunisia (Ain Cherichira).

*Nothofagoxylon* Gothan, 1908.

*Nothofagoxylon scalariforme* Gothan.

1908 *Nothofagoxylon scalariforme* Gothan, p. 20, pl. II, f. 14—18.

1924 *Nothofagoxylon scalariforme* Gothan: Kräusel, p. 19, pl. III, f. 1—3.

Remarks: Gothan compares this species particularly with the living *Nothofagus betuloides* Bl.

Occurrence: ? Upper Cretaceous or Tertiary; Antarctica (Seymour Island) and Patagonia.

**Nothofagoxylon** sp.

1924 **Nothofagoxylon** sp. (*scalariforme* ?): Kräusel, p. 23, pl. I, f. 13; III, f. 4—9.

1924 **Nothofagoxylon** sp.: Kräusel, p. 29.

Occurrence: Tertiary; Chiloe and Tierra del Fuego.

[**Ocoteoxylon** Schuster, 1908, p. 139.]

Included in **Laurinium**, q. v.

**Ornoxyton** Felix, 1882, p. 35.

**Ornoxyton fraxinoides** Felix.

1882 **Ornoxyton fraxinoides** Felix, p. 35.

1890 **Ornoxyton fraxinoides** Felix: Kaiser, p. 34.

Remarks: Silicified wood belonging to the *Oleaceae*, resembling the wood of *Fraxinus*. Original in Munich Museum.

Occurrence: Tertiary; near Cracow.

**Palackya** Crié, 1889, p. 87.

**Palackya philippinense** Crié.

1889 **Palackya philippinense** Crié, p. 87, pl. IX, (XVII), f. 1, 2.

1890 **Palackya philippinense** Crié: Schenk, p. 904.

Remarks: According to Schenk the structure suggests that of several *Caesalpinaceae*.

Occurrence: Mio-Pliocene; Philippines (Manilla, S. Juan del Monte).

**Paraphyllanthoxylon** Bailey, 1924, p. 446.

**Paraphyllanthoxylon arizonense** Bailey.

1924 **Paraphyllanthoxylon arizonense** Bailey, p. 446, pl. XV.

Remarks: Referred doubtfully to the *Euphorbiaceae*, and compared with *Phyllanthus* and *Bridelia*. Might well have been included in *Euphorbioxylon* Felix.

Occurrence: Cretaceous (Colorado Group); Arizona.

**Parinarioxylon** Pfeiffer & van Heurn, 1928, p. 1011.

**Parinarioxylon itersonii** Pfeiffer & van Heurn.

1928 **Parinarioxylon itersonii** Pfeiffer & van Heurn, p. 1011, pl. II, f. 2, 3.

Remarks: Compared with *Parinarium sumatranum* (*Rosaceae*, *Chrysobalanoideae*).

Occurrence: Tertiary; Java (Bolang).

**Pataloxylon** Sahni, 1920, p. 29.

**Pataloxylon porosum** Sahni.

1920 **Pataloxylon porosum** Sahni, p. 31, pl. III, f. 12—15.

Remarks: Affinities uncertain. Type in Queensland Geol. Surv. Coll.

Occurrence: Tertiary; Queensland (Wolston near Brisbane).

**Pataloxylon scalariforme Sahni.**

1920 **Pataloxylon scalariforme** Sahni, p. 29, pl. I, f. 6; II, f. 8—11; text-fig. 10.

Remarks: Affinities uncertain. Type in Queensland Geol. Surv. Coll.

Occurrence: Tertiary; Queensland (Mt. Meerschaum).

[**Perseoxylon** Felix, 1886, p. 490.]

Included in **Laurinium**, q. v.

**Petzholdia** Unger, 1842, p. 102.

**Petzholdia major** Unger.

1845 **Petzholdia major** Unger, p. 260.

1850 **Petzholdia major** Unger: Unger, p. 521.

1890 **Petzholdia major** Unger: Kaiser, p. 36.

Occurrence: Tertiary; West Indies.

**Petzholdia polonica** Unger.

1850 **Petzholdia polonica** Unger, p. 522.

1890 **Petzholdia polonica** Unger: Kaiser, p. 36.

Occurrence: Miocene; Galicia (Viniki).

**Petzholdia tropica** Unger.

1833 Dicotyledonous wood: Witham, p. 67, pl. XVI, f. 12, 13.

1842 **Petzholdia tropica** Unger, p. 102.

1842a **Petzholdia tropica** Unger: Unger, p. 176.

1845 **Petzholdia tropica** Unger: Unger, p. 260.

1850 **Petzholdia tropica** Unger: Unger, p. 521.

1890 **Petzholdia tropica** Unger: Kaiser, p. 36.

Occurrence: Tertiary; Antigua.

[**Phegonium** Unger, 1842.]

Remarks: The name *Fegonium* was first spelt *Phegonium*.

**Piccolominites** Unger, 1845, p. 262.

**Piccolominites sardus** Unger.

1845 **Piccolominites sardus** Unger, p. 262.

1850 **Piccolominites sardus** Unger: Unger, p. 523.

1890 **Piccolominites sardus** Unger: Kaiser, p. 36.

Remarks: Stated to resemble *Nicolia*.

Occurrence: Tertiary; Sardinia.

**Piper** L.

cf. **Piper** sp.

1844 cf. **Piper** sp.: Bowerbank, p. 16.

Remarks: Pitted vessels and other elements regarded as belonging to *Piper*.

Occurrence: Eocene (London Clay); England.

## **Piperites Goeppert.**

### **Piperites hasskarlianus Goeppert.**

1854 *Piperites hasskarlianus* Goeppert, p. 40, pl. III, f. 20—23.

1890 *Piperites hasskarlianus* Goeppert: Kaiser, p. 17.

Remarks: Kräusel (1925, p. 332, 1926, p. 1) regards this wood as quite unidentifiable, and states that the originals seem to be lost. The generic name was also used for leaf impressions.

Occurrence: Tertiary; Java.

### **Plataninium Unger, 1842, p. 101. em. Vater, 1884. p. 842.**

#### **Plataninium acerinum Unger.**

1842 *Plataninium acerinum* Unger, p. 101.

1842a *Plataninium acerinum* Unger: Unger, p. 174.

1845 *Plataninium acerinum* Unger: Unger, p. 222.

1847 *Plataninium acerinum* Unger: Unger, p. 138, pl. XLVII, f. 8—10.

1850 *Plataninium acerinum* Unger: Unger, p. 415.

1886 ? *Plataninium aceroides* (Goeppert) Windisch, p. 20.

1890 *Plataninium acerinum* Unger: Kaiser, p. 18.

Remarks: The wood recorded by Windisch from the Tertiary of Iceland is said to be similar to Unger's species, and also to the wood described by Schroeter as *Platanus aceroides* (see *Plataninium* sp.).

Occurrence: Formation and locality unknown.

#### **Plataninium boreale (Caspary).**

1888 *Platanus borealis* Caspary, p. 42.

1889 *Platanus borealis* Caspary: Caspary, p. 47, pl. IX, f. 1—11.

1890 *Platanus borealis* Caspary: Kaiser, p. 19.

Remarks: Stated to be nearer than *P. klebsii* to the living species of *Platanus*. Originals in Mus. Bot. Gart., Königsberg.

Occurrence: Tertiary; West Prussia (Pletnitz).

#### **Plataninium crystallophilum Platen.**

1908 *Plataninium crystallophilum* Platen, p. 111.

Occurrence: Tertiary; Arizona.

#### **Plataninium haydeni Felix.**

1896 *Plataninium haydeni* Felix, p. 251.

1899 *Plataninium haydeni* Felix: Knowlton, p. 767, pl. CXX, f. 3—5.

1908 *Plataninium haydeni* Felix: Platen, p. 129.

Occurrence: Miocene; Yellowstone National Park (Amethyst Mt.).

#### **Plataninium klebsii (Caspary).**

1888 *Platanus klebsii* Caspary, p. 41.

1889 *Platanus klebsii* Caspary: Caspary, p. 40, pl. VII, f. 11, 12; VIII, f. 1—24.

1890 *Platanus klebsii* Caspary: Kaiser, p. 19.

Remarks: Compared with *Platanus occidentalis*. Original in Mus. Bot. Gart., Königsberg.

Occurrence: Oligocene; Prussia (Palmnicken).

**Plataninium knowltoni Platen.**

1908 *Plataninium knowltoni* Platen, p. 130.

Occurrence: Miocene; Yellowstone National Park (Amethyst Mt.).

**Plataninium megapolitanum (Hofmann) Vater.**

1883 *Fegonium megapolitanum* Hofmann, p. 88.

1884 *Plataninium megapolitanum* (Hofmann) Vater, p. 838.

1887a *Plataninium megapolitanum* (Hofmann): Felix, p. 148.

1890 *Plataninium megapolitanum* (Hofmann): Kaiser, p. 19.

Occurrence: Tertiary ?; Mecklenburg.

**Plataninium pacificum Platen.**

1908 *Plataninium pacificum* Platen, p. 65.

Occurrence: Miocene; California (Nevada County).

**Plataninium porosum Felix.**

1887 *Plataninium porosum* Felix, p. 146, pl. XXVII, f. 6.

1889 *Plataninium porosum* Felix: Staub, p. 188.

1890 *Plataninium porosum* Felix: Kaiser, p. 19.

1894 *Plataninium porosum* Felix: Felix, p. 101.

Remarks: Root-wood. Originals in Mus. Ungar. Geol. Reichsanst.

Occurrence: Eocene (Sumgait series); Caucasus (Apscheron).

? Tertiary; Hungary (Nagy-Almas, Hunyad).

**Plataninium regulare Felix.**

1887a *Plataninium regulare* Felix, p. 148, pl. XXVII, f. 7.

1889 *Plataninium regulare* Felix: Staub, p. 188.

1890 *Plataninium regulare* Felix: Kaiser, p. 20.

Remarks: Originals in Mus. Ungar. Geol. Reichsanst.

Occurrence: Miocene (Lower Mediterranean); Hungary (Buda-fok).

**Plataninium salinarum (Unger) Vater.**

1849 *Fegonium salinarum* Unger, p. 320, pl. XXXV, f. 25—27.

1850 *Fegonium salinarum* Unger: Unger, p. 407.

1872 *Fegonium salinarum* Unger: Schimper, p. 608.

1873 *Fegonium salinarum* Unger: Stur, p. 9.

1884 *Plataninium salinarum* (Unger) Vater, p. 837.

1890 *Plataninium salinarum* (Unger): Kaiser, p. 20.

Occurrence: Tertiary; Galicia (Wieliczka).

**Plataninium subaffine Vater.**

1884 *Plataninium subaffine* Vater, p. 843, pl. XXIX, f. 19—21.

1890 *Plataninium subaffine* Vater: Kaiser, p. 20.

Occurrence: Derived from Lower Senonian; Brunswick (Helmstedt).

**Plataninium vasculosum (Unger) Vater.**

1842 *Phegonium vasculosum* Unger, p. 101.

1842a *Phegonium vasculosum* Unger: Unger, p. 173.

1842b *Phegonium vasculosum* Unger: Unger, p. 748.

- 1845 *Fegonium vasculosum* Unger: Unger, p. 219.  
 1847 *Fegonium vasculosum* Unger: Unger, p. 103, pl. XXVII, f. 7—9.  
 1849 *Fegonium vasculosum* Unger: Unger, p. 321.  
 1850 *Fegonium vasculosum* Unger: Unger, p. 407.  
 1872 *Fegonium vasculosum* Unger: Schimper, p. 608.  
 1884 *Plataninium vasculosum* (Unger) Vater, p. 837.  
 1887a *Plataninium vasculosum* (Unger): Felix, p. 147.  
 1890 *Plataninium vasculosum* (Unger): Kaiser, p. 20.  
 Occurrence: Tertiary; Upper and Lower Austria, Styria, Galicia.

### **Plataninium sp.**

- 1880 *Platanus aceroides* Goeppert: Schroeter, p. 35, pl. I, f. 10.  
 1886 *Plataninium aceroides* (Goeppert) Windisch, p. 20.  
 Remarks: Schroeter gave this wood a name instituted for leaves, but there is no evidence of connexion. The combination used by Windisch is also unacceptable, and as the wood is poorly preserved no specific name need be used. Original slides in the Geol. Dept., Brit. Mus. (Nat. Hist.).  
 Occurrence: Tertiary; Arctic Canada (Mackenzie River).

### **? Plataninium sp.**

- 1888 *Platanus* (?): Dawson, p. 33.  
 Remarks: No description or figure. Requires confirmation.  
 Occurrence: Upper Cretaceous (Belly River Series); Western Canada (Ribstone Creek).

### **Plataninium sp.**

- 1894 *Plataninium* sp.: Felix, p. 102.  
 Occurrence: Eocene (Sumgait Series); Caucasus (Apscheron).

### **Plataninium sp.**

- 1930a *Plataninium*: Schönfeld, p. 70.  
 Occurrence: ? Oligocene; Saxony (Deutzen).

## **Populocaulis** Stopes & Fujii, 1910, p. 63.

### **Populocaulis yezoensis** Stopes & Fujii.

- 1910 *Populocaulis yezoensis* Stopes & Fujii, p. 63, pl. VIII, f. 49.  
 Remarks: Small twigs, transverse sections only. Probably unidentifiable. Originals in Geol. Dept., Brit. Mus. (Nat. Hist.).  
 Occurrence: Upper Cretaceous; Japan (Hokkaido).

### **[Populoxylon** Knowlton, 1899, p. 770.]

Remarks: Name mentioned, but rejected in favour of *Rhamnacium* for a wood (*R. radiatum*) from the Yellowstone National Park. In any case the name would have to be regarded as a synonym of *Salicinium*, as most authorities agree that the woods of *Salix* and *Populus* cannot be separated.

## **Populus** L.

See also *Salicinium* sp. and *Salix* sp.

? **Populus** sp.

1920 ? **Populus** sp.: Kräusel, p. 453, text-fig. 1—3.

Occurrence: Miocene; Silesia (Knurow).

[**Populus** sp. Dawson, 1875, p. 331.]

See **Rhamnacinium porcupinianum** and **R. triseriatum**.

**Pritchardia** Unger, 1842, p. 102.

[Non **Pritchardia** Seem. & Wendl., 1862, (Palmae).]

**Pritchardia insignis** Unger.

1842 **Pritchardia insignis** Unger, p. 102.

1842a **Pritchardia insignis** Unger: Unger, p. 177.

1845 **Pritchardia insignis** Unger: Unger, p. 260.

1850 **Pritchardia insignis** Unger: Unger, p. 522.

1890 **Pritchardia insignis** Unger: Kaiser, p. 36.

Occurrence: Tertiary; West Indies.

**Pruninium** Platen, 1908, p. 122.

**Pruninium gummosum** Platen.

1908 **Pruninium gummosum** Platen, p. 122, pl. III, f. 2—6.

Remarks: Compared with several living species of *Prunus*.

Occurrence: Miocene; Yellowstone National Park (Amethyst Mt.).

**Prunus** L.

**Prunus** sp.

1914 **Prunus** sp.: Szafer, p. 349.

Occurrence: Pleistocene; Poland.

**Pterocarpus** L.

**Pterocarpus santalinus** L.

1890 **Pterocarpus santalinus** L.: Schenk, p. 902, f. 433.

Remarks: This wood is stated to be indistinguishable from that of the living red sandal-wood.

Occurrence: Age unknown; East Indies.

**Quercinium** Unger, 1842, p. 101.

Including **Kloedenia**, **Schimperites** and **Schmidites**.

**Quercinium abromeiti** Platen.

1908 **Quercinium abromeiti** Platen, p. 23.

Occurrence: Pliocene; California (Calistoga).

**Quercinium anomalum** Platen.

1908 **Quercinium anomalum** Platen, p. 47.

Occurrence: Miocene; California (Nevada County).

**Quercinium astianum Pampaloni.**1904 *Quercinium astianum* Pampaloni, p. 540, f. 1—3.

Occurrence: Pliocene; Piedmont (Ceresole d'Alba).

**Quercinium austriacum Unger.**1842 *Quercinium austriacum* Unger, p. 101.1842a *Quercinium austriacum* Unger: Unger, p. 174.1842b *Quercinium austriacum* Unger: Unger, p. 748.1845 *Quercinium austriacum* Unger: Unger, p. 218.1847 *Quercinium austriacum* Unger: Unger, p. 107, pl. XXIX, f. 4—6.1850 *Quercinium austriacum* Unger: Unger, p. 405.1872 *Quercinium austriacum* Unger: Schimper, p. 662.1890 *Quercinium austriacum* Unger: Kaiser, p. 11.

Occurrence: Tertiary; Austria (Bachmannig).

**Quercinium böckhianum Felix.**1884 *Quercinium böckhianum* Felix, p. 21, pl. I, f. 6.1889 *Quercinium böckhianum* Felix: Staub, p. 187.1890 *Quercinium böckhianum* Felix: Kaiser, p. 11.Remarks: Very close to *Q. compactum*. Originals in Mus. Ungar. Geol. Reichsanst.

Occurrence: Tertiary; Hungary (Medgyaszó).

**Quercinium compactum Schleiden.**1855 *Quercinium compactum* Schleiden, p. 42.1883 *Quercinium compactum* Schleiden: Felix, p. 75, pl. II, f. 7.1884 *Quercinium compactum* Schleiden: Felix, p. 19.1889 *Quercinium compactum* Schleiden: Staub, p. 187.1890 *Quercinium compactum* Schleiden: Kaiser, p. 11.Remarks: Felix studied and figured Schleiden's original sections from the Jena Museum, and compared the species with *Quercus lusitana*.

Occurrence: Tertiary; Hungary (Libethen).

**Quercinium eocenicum Fritel & Viguier.**1911 *Quercinium eocenicum* Fritel & Viguier, p. 70, pl. I.

Remarks: The authors note that this wood, although much older than that described by Eames (1910) shows no trace of the supposed primitive structure of the rays.

Occurrence: Eocene (Sparnacian); Paris basin (Clairizet).

**Quercinium helictoxyloides Felix.**1884 *Quercinium helictoxyloides* Felix, p. 17, pl. I, f. 3—5; IV, f. 3.1889 *Quercinium helictoxyloides* Felix: Staub, p. 187.1890 *Quercinium helictoxyloides* Felix: Kaiser, p. 12.

Remarks: Root-wood. Originals in Mus. Ungar. Geol. Reichsanst.

Occurrence: ? Pliocene; Hungary (Gyepűfüzes).

**Quercinium knowltoni Felix.**1896 *Quercinium knowltoni* Felix, p. 250, pl. VI, f. 2.1899 *Quercinium knowltoni* Felix: Knowlton, p. 773.1910 *Quercinium knowltoni* Felix: Eames, p. 162.

Occurrence: Miocene; Yellowstone National Park (Amethyst Mt.).

**Quercinium lamarense** Knowlton.

1899 *Quercinium lamarense* Knowlton, p. 771, pl. CXVIII, f. 5; CXX, f. 2; CXXI, f. 1, 2.

1910 *Quercinium lamarense* Knowlton: Eames, p. 162.

Remarks: Knowlton suggests that this may be identical with *Q. knowltoni* Felix.

Occurrence: Miocene; Yellowstone National Park.

**Quercinium leptotichum** (Schleiden) Felix.

1855 *Schimperites leptotichus* Schleiden, p. 42.

1883 *Quercinium leptotichum* (Schleiden) Felix, p. 77.

1884 *Quercinium leptotichum* (Schleiden): Felix, p. 23.

1889 *Quercinium leptotichum* (Schleiden): Staub, p. 188.

1890 *Quercinium leptotichum* (Schleiden): Kaiser, p. 12.

Remarks: Schleiden's original specimen was re-examined by Felix, and compared with various species of *Quercus*. It perhaps shows root structure.

Occurrence: Tertiary; Hungary (Libethen).

**Quercinium lesquereuxi** Platen.

1908 *Quercinium lesquereuxi* Platen, pp. 24, 50.

Occurrence: Miocene and Pliocene; California (Calistoga and Lake Tahoe).

**Quercinium longiradiatum** (Felix).

1887a *Quercinium stauhi* var. *longiradiatum* Felix, p. 151, pl. XXVII, f. 3.

1890 *Quercinium stauhi* var. *longiradiatum* Felix: Kaiser, p. 13.

Remarks: It is possible that this wood should be included in *Q. stauhi*, but in any case the use of varietal names should be avoided. Probably root-wood. Original in Mus. Ungar. Geol. Reichsanst.

Occurrence: ? Tertiary; Hungary.

**Quercinium montanum** (Mercklin) Felix.

1855 *Quercinium rossicum* α *montanum* Mercklin, p. 28, pl. VII, f. 1—8.

1880 *Quercinium rossicum montanum* Mercklin: Krendowsky, p. 218 [Not seen].

1883 *Quercinium montanum* (Mercklin) Felix, p. 72, pl. III, f. 2, 7.

1890 *Quercinium montanum* (Mercklin): Kaiser, p. 12.

Remarks: Compared by Felix with the living *Q. tozza*, and by Mercklin with *Q. sessiliflora*.

Occurrence: Tertiary; Russia (Ekaterinoslav).

**Quercinium pliocaenicum** Schuster.

1908a *Quercinium pliocaenicum* Schuster, p. 52, pls. III, IV.

Remarks: Placed in the sub-genus *Erythrobalanus*. Schuster discusses the differences between his species and certain other fossil oaks: *Q. knowltoni*, *Q. böckhianum*, *Q. compactum*, and *Q. montanum*.

Occurrence: Pliocene; Idaho (Clover Creek).

**[Quercinium primaevum (Goeppert).]**

Synonym of *Quercinium quercoides*, q. v.

**Quercinium quercoides (Goeppert).**

- 1839 *Kloedenia quercoides* Goeppert, p. 521, pl. VIII B.  
 1845 *Quercites primaevus* Goeppert, pp. 82, 84.  
 1862 *Quercus primaeva* (Goeppert) Goeppert, p. 552.  
 1876 *Quercites primaevus* Goeppert: Conwentz, p. 29.  
 1881 *Quercus primaeva* (Goeppert): Goeppert, p. 133, pl. II, f. 6; III, f. 7.  
 1883 *Quercites primaevus* Goeppert: Hofmann, p. 86.  
 1883 *Quercinium primaevum* (Goeppert) Felix, p. 69, pl. III, f. 4, 8.  
 1884 *Quercinium primaevum* (Goeppert): Felix, p. 12.  
 1889 *Quercinium primaevum* (Goeppert): Staub, p. 187.  
 1889 *Quercus primaeva* (Goeppert): Caspary, pp. 74—76.  
 1890 *Quercites primaevus* Goeppert: Kaiser, p. 12.

Remarks: Since *Quercinium* is merely a form-genus for fossil wood closely resembling the recent *Quercus*, it would be pointless to revive the slightly earlier name *Kloedenia*, which Goeppert himself abandoned in 1845. There seems no reason, however, for adopting, as Felix did, the later specific name *Q. primaevum*, applied by Goeppert to a wood which may or may not be identical with *Q. quercoides*.

Felix 1883 (pp. 69—72) was able to show that one of Goeppert's originals came from Hungary (Tapolcsan), part of the same specimen being in Dresden and part in Berlin. The species is therefore really founded on this specimen as described by Felix, and records from other localities should be regarded as dubious. Felix compares the fossil with the recent *Quercus castaneaefolia*. Caspary (1889) also discusses the confusion which has centred around *Q. quercoides*, and compares his *Q. subgarryanum* with the wood described by Felix. Goeppert introduced the name *Quercites primaevus* for some wood from the amber-beds of the Baltic (stating that it was identical with his previously described *Kloedenia quercoides*) but these originals of Goeppert's seem to have been lost. Caspary re-examined one supposed original (he does not state the locality) and found that it showed no structure whatever. There is therefore no evidence concerning Goeppert's *Q. primaevus* from Samland, and the only described oak wood from the amber-beds is *Q. subgarryanum* Caspary.

Unger (1847, p. LXXIX, 1850, p. 405) cites *Quercites primaevus* as a synonym of his *Quercinium sabulosum*, and Conwentz cites the latter as a synonym of the former. *Q. sabulosum*, however, has never been adequately described, nor figured.

It is possible that *Q. vasculosum* may belong to this species.

Occurrence: Tertiary; Hungary (Tapolcsan). Also recorded from Samland, Silesia, Posen, Mecklenburg.

**Quercinium rossicum Mercklin.**

- 1855 *Quercinium rossicum* Mercklin, p. 27, pl. VI, f. 1—8.  
 1865 *Quercinium rossicum* Mercklin: Eichwald, p. 57.  
 1890 *Quercinium rossicum* Mercklin: Kaiser, p. 13.

Remarks: Compared with *Quercus pedunculata*. For *Q. rossicum a montanum*, see *Q. montanum*.

Occurrence: Tertiary; Russia (Alexandrovsk in Ekaterinoslav).

**Quercinium sabulosum Unger.**

- 1842 *Quercinium sabulosum* Unger, p. 101.  
 1842a *Quercinium sabulosum* Unger: Unger, p. 173.  
 1842b *Quercinium sabulosum* Unger: Unger, p. 747.  
 1845 *Quercinium sabulosum* Unger: Unger, p. 218.  
 1847 *Quercinium sabulosum* Unger: Unger, p. 108.

- 1850 *Quercinium sabulosum* Unger: Unger, p. 405.  
 1872 *Quercinium sabulosum* Unger: Schimper, p. 661.  
 1889 *Quercinium sabulosum* Unger: Staub, p. 188.  
 1890 *Quercinium sabulosum* Unger: Kaiser, p. 13.

Remarks: Unger (1845) cites Goeppert's *Kloedenia quercoides* and *Quercites primaevus* as synonyms of *Q. sabulosum*, without giving any reasons. Conwentz (1876) includes *Q. sabulosum* as a synonym of *Quercites primaevus*.

The species never seems to have been figured, and the description is inadequate.

Occurrence: Tertiary; various localities in Austria, Moravia, Hungary, Silesia.

### *Quercinium solerederi* Platen.

- 1908 *Quercinium solerederi* Platen, p. 41.  
 Occurrence: Mio-Pliocene; California.

### *Quercinium staubi* Felix.

- 1884 *Quercinium staubi* Felix, p. 15, pl. I, f. 2.  
 1889 *Quercinium staubi* Felix: Staub, p. 187.  
 1890 *Quercinium staubi* Felix: Kaiser, p. 13.

Remarks: Resembles *Q. quercoides* and the recent *Quercus castaneaefolia*. Originals in Mus. Ungar. Geol. Reichsanst. For *Q. staubi* var. *longiradiatum*, see *Q. longiradiatum*.

Occurrence: Pliocene; Hungary (Gyepűfüzes).

### *Quercinium subgarryanum* (Caspary).

- 1888 *Quercus subgarryana* Caspary, p. 44.  
 1889 *Quercus subgarryana* Caspary: Caspary, p. 71, pl. XIII, f. 6—11.  
 1890 *Quercus subgarryana* Caspary: Kaiser, p. 14.

Remarks: Compared with the North American *Quercus garryana*. Originals in Mus. Bot. Gart., Königsberg. Caspary points out the differences between this wood and the *Quercinium* "*primaevum*" described by Felix; Goeppert had recorded *Quercites primaevus* (as a synonym of his *Kloedenia quercoides*) from the amber-beds of the Baltic, but there does not appear to be any evidence as to what this amber-bed wood really was. Felix's re-description of Goeppert's species was partly founded on some originals of Goeppert's from Hungary. (See also the remarks on *Quercinium quercoides*).

Occurrence: Tertiary; Königsberg.

### *Quercinium transiens* (Conwentz).

- 1876 *Quercites transiens* Conwentz, p. 30.  
 1890 *Quercites transiens* Conwentz: Kaiser, p. 14.  
 Occurrence: Erratic block; Galicia.

### *Quercinium transylvanicum* Unger.

- 1842 *Quercinium transylvanicum* Unger, p. 101.  
 1842a *Quercinium transylvanicum* Unger: Unger, p. 174.  
 1845 *Quercinium transylvanicum* Unger, p. 218.  
 1847 *Quercinium transylvanicum* Unger, p. 108.  
 1850 *Quercinium transylvanicum* Unger, p. 405.  
 1872 *Quercinium transylvanicum* Unger: Schimper, p. 662.  
 1889 *Quercinium transylvanicum* Unger: Staub, p. 188.  
 1890 *Quercinium transylvanicum* Unger: Kaiser, p. 14.

Occurrence: Tertiary; Transylvania.

**Quercinium vasculosum (Schleiden) Felix.**1855 *Schmidites vasculosus* Schleiden, p. 39.1883 *Quercinium vasculosum* (Schleiden) Felix, p. 76, pl. II, f. 2.1884 *Quercinium vasculosum* (Schleiden): Felix, p. 20.1889 *Quercinium vasculosum* (Schleiden): Staub, p. 187.1890 *Quercinium vasculosum* (Schleiden): Kaiser, p. 14.

Remarks: Felix examined the originals in the Jena Museum and showed that the wood belonged to *Quercinium*, and not to the *Leguminosae*, as Schleiden thought. Felix puts it near *Q. quercoides*.

Occurrence: Tertiary; Hungary (Tapolcsan).

**Quercinium wardi Platen.**1908 *Quercinium wardi* Platen, p. 49.

Occurrence: Mio-Pliocene; California.

**Quercinium sp.**

1910 "Fossil oak": Eames, p. 161, pl. VIII, f. 5, 6.

Remarks: The author discusses the structure of the broad rays of an unnamed Miocene oak, and its bearing on the origin of the broad rays in *Quercus*. See also remarks on *Q. eocenicum*.

Occurrence: Miocene; California (gold gravels).

**Quercinium sp.**1912 *Quercinium* sp.: Becke, p. 85.

Occurrence: Tertiary; Germany (Joachimstal).

**Quercinium sp.**

1885 Eichenholz: Quenstedt, p. 1150, pl. XCVIII, f. 23.

Remarks: Two poor figures of a silicified oak wood; horizon and locality not stated.

**[*Quercites primaevus* Goeppert.]**

Synonym of *Quercinium quercoides*, q. v.

**[*Quercoxylon* Hofmann, 1929, p. 82.]**

Synonym of *Quercinium*. See *Quercus cerris*.

***Quercus* L.*****Quercus* cf. *cerris* L.**1929 *Quercoxylon cerris* Hofmann, p. 82.

Remarks: No figure nor description. See remarks on *Fraxinus excelsior*.

Occurrence: Plio-Pleistocene; Hungary (Csadberge).

**[*Quercus primaeva* Goeppert.]**

Synonym of *Quercinium quercoides*, q. v.

**Quercus sp.**

1873 *Quercus* sp.: Dawson, p. 68.

Remarks: Requires confirmation.

Occurrence: Cretaceous; British Columbia.

**Quercus sp.**

1914 *Quercus* sp.: Szafer, p. 349.

1926a *Quercus*: Fietz, p. 417.

Occurrence: Pleistocene; Poland.

Prehistoric (Loess); Czechoslovakia (Brno).

**Reynosia Grisebach.****Reynosia texana Penhallow.**

1907 *Reynosia texana* Penhallow, p. 97, f. 4, 5.

1924 *Reynosia texana* Penhallow: Berry, p. 75.

Remarks: Said to resemble the existing *R. latifolia* of Florida and Cuba. Originals in Peter Redpath Mus., Montreal.

Occurrence: Eocene (Yegua); Texas (Somerville).

**Reveesia Walp.****Reveesia wallichii R. Br.**

1911a *Reveesia wallichii* R. Br.: Schuster, p. 246.

Remarks: The identification should be accepted with reserve.

Occurrence: Pithecanthropus Beds; Java.

**Rhamnacinium Felix, 1894, p. 89.****Rhamnacinium affine Felix.**

1894 *Rhamnacinium affine* Felix, p. 88, pl. VIII, f. 3a—d.

Remarks: Compared with the living *Prinos* and *Pomaderris*, and the fossil *Rhamnacinium primaevum*.

Occurrence: ? Eocene (Sumgait series); Caucasus (Apscheron).

**Rhamnacinium porcupinianum Penhallow.**

1875 *Populus* sp. (pars): Dawson, p. 331.

1903 *Rhamnacinium porcupinianum* Penhallow, p. 48, f. 14—16, 21, 22.

Occurrence: Eocene; Saskatchewan (Porcupine Creek).

**Rhamnacinium primaevum (Caspary) Felix.**

1888 *Schinus primaevum* Caspary, p. 39.

1889 *Schinus primaevum* Caspary: Caspary, p. 20, pl. IV, f. 13; V, f. 1—4.

1890 *Schinus primaevum* Caspary: Kaiser, p. 26.

1894 *Rhamnacinium primaevum* (Caspary) Felix, pp. 87, 89.

Remarks: Compared by Caspary with *Schinus molle* (*Anacardiaceae*), but referred by Felix to the *Rhamnaceae* and compared with *Prinos* and *Pomaderris*.

Occurrence: ? Tertiary; West Prussia (Pempau).

**Rhamnacinium radiatum** Felix.1896 *Rhamnacinium radiatum* Felix, p. 252, pl. VI, f. 3.1899 *Rhamnacinium radiatum* Knowlton, p. 769, pl. CXVIII, f. 6, 7; CXIX, f. 1.Remarks: Felix notes the distinctions from *R. affine* and *R. primaevum*.

Occurrence: Miocene; Yellowstone National Park (Amethyst Mt.).

**Rhamnacinium texanum** Penhallow.1907 *Rhamnacinium texanum* Penhallow, p. 96, f. 1—3.1924 *Rhamnacinium texanum* Penhallow: Berry, p. 74.

Remarks: Originals in Peter Redpath Museum, Montreal.

Occurrence: Eocene (Yegua); Texas (Somerville).

**Rhamnacinium triseriatum** Penhallow.1875 *Populus* sp. (pars): Dawson, p. 331.1903 *Rhamnacinium triseriatum* Penhallow, p. 54, f. 17—20.

Occurrence: Eocene; Saskatchewan (Porcupine Creek).

**Rhamnus** L.**Rhamnus cathartica** L.1926a *Rhamnus cathartica* L.: Fietz, p. 419.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**[Rhizoalnoxylon** Conwentz, 1880.]Included in *Alnoxylon* Felix.**Rhodium** Unger, 1850, p. 475.**Rhodium juglandinum** Unger.1850 *Rhodium juglandinum* Unger, p. 475.1889 *Rhodium juglandinum* Unger: Staub, p. 190.1890 *Rhodium juglandinum* Unger: Kaiser, p. 26.

Occurrence: Tertiary; Hungary (Antal near Schemnitz).

**Rhodium philippinense** Crié.1889 *Rhodium philippinense* Crié, p. 86, pl. IX (XVII), f. 3, 4.

Occurrence: Tertiary; Philippines (Luzon, Manila, S. Juan del Monte).

**Rhodium ungeri** Mercklin.1855 *Rhodium ungeri* Mercklin, p. 21, pl. I, f. 1, 2; II, f. 1—10.1865 *Rhodium ungeri* Mercklin: Eichwald, p. 65.1890 *Rhodium ungeri* Mercklin: Kaiser, p. 26.Remarks: Compared with *Rhus juglandifolia*.

Occurrence: ? Cretaceous; Russia (Durasovka in Saratov).

**[Roemeria** Unger, 1852a, p. 95.]Remarks: Non *Roemeria* Medicus, 1792. For *R. americana* Unger see *Dryoxylon americanum*.

**Rohlfisia** Schenk, 1880, p. 660.**Rohlfisia celastroides** Schenk.

- 1880 *Rohlfisia celastroides* Schenk, p. 660.  
1883 *Rohlfisia celastroides* Schenk: Schenk, p. 9, pl. IV, f. 12.  
1888 *Rohlfisia celastroides* Schenk: Schenk, p. 20.  
1890 *Rohlfisia celastroides* Schenk: Kaiser, p. 27.

Remarks: Probably *Celastraceae*.

Occurrence: Upper Cretaceous; Libyan Desert.

**Rosthornia** Unger, 1842, p. 101.**Rosthornia carinthiaca** Unger.

- 1842 *Rosthornia carinthiaca* Unger, p. 101.  
1842a *Rosthornia carinthiaca* Unger: Unger, p. 175.  
1845 *Rosthornia carinthiaca* Unger: Unger, p. 225.  
1850 *Rosthornia carinthiaca* Unger: Unger, p. 421.  
1890 *Rosthornia carinthiaca* Unger: Kaiser, p. 16.  
Remarks: Referred doubtfully to the *Salicaceae* by Unger. Lignier (1907, p. 271 footnote) suggests that it might possibly belong to the *Magnoliaceae*.

Occurrence: Upper Cretaceous (Gosau formation); Carinthia.

**Ruyschioxylon** Hofmann, 1884, p. 183.**Ruyschioxylon sumatrense** Hofmann.

- 1884 *Ruyschioxylon sumatrense* Hofmann, p. 183 (32).  
1890 *Ruyschioxylon sumatrense* Hofmann: Kaiser, p. 24.  
1930 *Ruyschioxylon sumatrense* Hofmann: Schönfeld, p. 124.  
Remarks: A silicified liane referred to the *Ternstroemiaceae*, and compared with the recent *Ruyschia*. According to Schönfeld it is very close to *Helictoxylon schenki*. Original in Coll. Univ. Utrecht.

Occurrence: Tertiary; Sumatra.

**Sabiocaulis** Stopes & Fujii, 1910, p. 66.**Sabiocaulis sakuraii** Stopes & Fujii.

- 1910 *Sabiocaulis sakuraii* Stopes & Fujii, p. 66, pl. VIII, f. 54; IX, f. 55—57.

Remarks: Compared with *Sabia japonica*. Some of the originals are in the Geol. Dept., Brit. Mus. (Nat. Hist.).

Occurrence: Upper Cretaceous; Japan (Hokkaido).

**Sabulia** Stopes, 1912, p. 93.**Sabulia scottii** Stopes.

- 1912 *Sabulia scottii* Stopes, p. 93, pl. VI, f. 2; VIII, f. 9.  
1915 *Sabulia scottii* Stopes: Stopes, p. 272, text-fig. 82—84.  
Remarks: Affinities unknown. Originals in Geol. Dept., Brit. Mus. (Nat. Hist.).  
Occurrence: Lower Cretaceous (Aptian); England (Woburn).

**Salicinium** Unger, 1850, p. 420.**Salicinium antiquum** (Falqui).

1906 *Salix purpurea* Linn.  $\beta$  *antiqua* Falqui, p. 21, pl. I, f. 6.

Remarks: Presuming that this belongs to the *Salicaceae*, it should obviously be put in the form-genus *Salicinium*, and not identified with a living species.

Occurrence: Miocene; Sardinia.

**Salicinium biradiatum** (Lignier).

1907 *Salicinoxydon biradiatum* Lignier, p. 272, pl. XVIII, f. 18—24; XXIII, f. 84—92.

Remarks: This wood is referred with some hesitation to the *Salicaceae*.

Occurrence: Cenomanian; Seine-Inférieure (La Hève).

**Salicinium bruxellense** Hofmann.

1884 *Salicinium bruxellense* Hofmann, p. 193 (42).

1890 *Salicinium bruxellense* Hofmann: Kaiser, p. 16.

Remarks: Original in Coll. Univ. Utrecht.

Occurrence: Lower Tertiary; Belgium (near Brussels).

**Salicinium messinianum** Pampaloni.

1904 *Salicinium messinianum* Pampaloni, p. 545, f. 10—11.

Occurrence: Pliocene; Piedmont.

**Salicinium miocenicum** (Kaiser).

1880a *Salicinoxydon miocenicum* Kaiser, p. 511.

1890 *Salicinoxydon miocenicum* Kaiser: Kaiser, p. 16.

Remarks: Kaiser apparently overlooked *Salicinium populinum* Unger when he stated that no fossil salicineous wood had previously been described. Kaiser's name *Salicinoxydon* is superfluous.

See *Salix* ? sp. for a record by Fietz from the Pleistocene of Silesia.

Occurrence: Probably Miocene; Schleswig-Holstein (Sylt).

**Salicinium populinum** Unger.

1850 *Salicinium populinum* Unger, p. 420.

1882 *Salicinium populinum* Unger: Felix, p. 36.

1890 *Salicinium populinum* Unger: Kaiser, p. 16.

Occurrence: ? Tertiary; Vienna.

**Salicinium varians** Hofmann.

1884 *Salicinium varians* Hofmann, p. 191.

1890 *Salicinium varians* Hofmann: Kaiser, p. 16.

Remarks: Caspary (1889, p. 5) doubts whether this wood belongs to the *Salicaceae*. Originals in Coll. Univ. Utrecht.

Occurrence: Senonian; Holland (Pietersberg near Maastricht).

**? Salicinium** sp.

1878 *Populus* sp.: Dawson, p. 68.

1888 *Populus*: Dawson, p. 33.

Remarks: No description or illustration. Other woods referred by Dawson to *Populus* were described by Penhallow as *Rhamnacinium*.

Occurrence: Upper Cretaceous; British Columbia (Vancouver I.), Western Canada (Swift Current).

[**Salicinoxyton** Kaiser, 1880a, p. 511.]

Synonym of **Salicinium**, q. v. for all species described under **Salicinoxyton**.

### **Salix** L.

[*Salix purpurea* L.  $\beta$  *antiqua* Falqui.]

See **Salicinium antiquum**.

### **Salix** sp.

1914 *Salix* sp.: Szafer, p. 347.

Occurrence: Pleistocene; Poland.

### **Salix** ? sp.

1926 **Salicinoxyton miocenicum** Kaiser: Fietz, p. 234.

1926a *Salix* ? : Fietz, p. 417.

Remarks: There does not seem sufficient reason for referring a Pleistocene wood to Kaiser's species, unless indeed *S. miocenicum* is to cover every fossil wood belonging to the *Salicaceae*. The name *Salix* is queried because, as Fietz points out, there is no absolute distinction between the woods of *Salix* and of *Populus*. (See remarks on nomenclature in the introduction).

Occurrence: Pleistocene; Silesia (Weidenau), Czechoslovakia (Brno).

### **Santalum** L.

### **Santalum** sp.

1882b **Santalum** sp.: Kraus, p. 8.

Remarks: The supposed former occurrence of *S. album* on Juan Fernandez is so far confirmed that Kraus regards some wood investigated by him as undoubtedly belonging to the genus *Santalum*, which is today confined to the East Indies.

Occurrence: Sub-fossil; Juan Fernandez.

[**Sapindopsoxyton** Pfeiffer & van Heurn, 1928, p. 1009.]

Included in **Sapindoxylon**, q. v. for *S. klitzingi*.

**Sapindoxylon** Kräusel, 1922, p. 256.

### **Sapindoxylon janssonii** Kräusel.

1922 **Sapindoxylon janssonii** Kräusel, p. 256, pl. I, f. 9; II, f. 3; III, f. 6; V, f. 5; VI, f. 2; text-fig. 22.

1922 ? **Sapindoxylon janssonii** Kräusel: Kräusel, p. 258, pl. I, f. 8.

1928 **Sapindoxylon janssonii** Kräusel: Pfeiffer & van Heurn, p. 1007.

Remarks: Compared particularly with the genus *Pometia*.

Occurrence: Tertiary; Java, South Sumatra.

**Sapindoxylon klitzingi** (Pfeiffer & van Heurn).1928 **Sapindopsoxylon klitzingi** Pfeiffer & van Heurn, p. 1005, pl. I, f. 1.

Remarks: Referred to the *Sapindaceae*, but considered to differ from Kräusel's *Sapindoxylon* in certain respects. The authors disclaim any intention of expressing a relationship with *Sapindopsis* Fontaine. The new generic name seems to me both unfortunate and unnecessary.

Occurrence: Tertiary; Java (Bolang).

**Sapotoxylon** Felix, 1882.**Sapotoxylon gümbelii** Felix.1882 **Sapotoxylon gümbelii** Felix, p. 54.1883 **Sapotoxylon gümbelii** Felix: Felix, p. 67, pl. II, f. 5, 8.1890 **Sapotoxylon gümbelii** Felix: Kaiser, p. 33.

Remarks: Silicified wood, apparently a water-worn block. Referred to the Sapotaceae, but Kaiser notes that it is also similar to the wood of the Anonaceae.

Occurrence: Tertiary ?; Wagenhofen near Neuburg on the Danube.

**Sapotoxylon taeniatum** Felix.1882 **Sapotoxylon taeniatum** Felix, p. 56.1883 **Sapotoxylon taeniatum** Felix: Felix, p. 68, pl. III, f. 5, 6.1890 **Sapotoxylon taeniatum** Felix: Kaiser, p. 33.

Occurrence: Locality and horizon unknown. Original in Munich Museum.

**Saururopsis** Stopes & Fujii, 1910, p. 58.**Saururopsis niponensis** Stopes & Fujii.1910 **Saururopsis niponensis** Stopes & Fujii, p. 58, pl. VII, f. 42—47, text-fig. 19.

Remarks: A small stem believed to belong to the *Saururaceae*. Some of the originals are in the Geol. Dept., Brit. Mus. (Nat. Hist.).

Occurrence: Upper Cretaceous; Japan (Hokkaido).

**[Schimperites** Schleiden, 1855, p. 42.]

Synonym of **Quercinium**.

**[Schimperites leptotichus** Schleiden.]

Synonym of **Quercinium leptotichum**, q. v.

**[Schinus primaevum** Caspary.]

Synonym of **Rhamnacinium primaevum**, q. v.

**Schleidenites** Unger, 1842, p. 102.**Schleidenites compositus** Unger.1842 **Schleidenites compositus** Unger, p. 102.1842a **Schleidenites compositus** Unger: Unger, p. 178.1845 **Schleidenites compositus** Unger: Unger, p. 266.

1850 *Schleidenites compositus* Unger: Unger, p. 526.

1889 *Schleidenites compositus* Unger: Staub, p. 191.

1890 *Schleidenites compositus* Unger: Kaiser, p. 32.

Remarks: Referred by Unger to the *Leguminosae*.

Occurrence: Tertiary; Hungary.

[**Schmidites** Schleiden, 1855, p. 39.]

Synonym of *Quercinium*.

[**Schmidites vasculosus** Schleiden.]

Synonym of *Quercinium vasculosum*, q. v.

**Schmiedeliopsis** Felix, 1882, p. 72.

**Schmiedeliopsis zirkelii** Felix.

1882 *Schmiedeliopsis zirkelii* Felix, p. 72.

1883a *Schmiedeliopsis zirkelii* Felix: Felix, p. 16, pl. II, f. 6, 8.

1890 *Schmiedeliopsis zirkelii* Felix: Kaiser, p. 26.

Remarks: Possibly belongs to the *Sapindaceae*, as the wood resembles that of *Schmiedelia haemorrhoea*. Original in Munich.

Occurrence: Tertiary; Antigua.

[**Shoreoxylon** den Berger, 1923, p. 147 & 1927, p. 497.]

Remarks: For Dipterocarpaceous woods resembling those of the *Shoreae* (*Dipterocarpoxyton* in part). Kräusel (1925, 1926) doubts whether it is yet possible satisfactorily to subdivide the genus *Dipterocarpoxyton*, and for the purposes of this catalogue I have followed Kräusel.

[**Shoreoxylon djambiense**, *S. kräuseli*, *S. moroides*.]

See *Dipterocarpoxyton*.

[**Shoreoxylon palembangense** (Kräusel) den Berger.]

See *Caesalpinioxylon*.

**Sillimannia** Unger, 1850, p. 524.

**Sillimannia texana** Unger.

1850 *Sillimannia texana* Unger, p. 524.

1852a *Sillimannia texana* Unger: Unger, p. 95.

1890 *Sillimannia texana* Unger: Kaiser, p. 36.

Remarks: Referred by Unger to the *Sterculiaceae*.

Occurrence: Cretaceous; Texas.

**Simarubinium** Platen, 1908, p. 54.

**Simarubinium crystallophorum** Platen.

1908 *Simarubinium crystallophorum* Platen, p. 54.

Occurrence: Tertiary; California.

**Simarubinium engelhardti** Platen.1908 *Simarubinium engelhardti* Platen, p. 56.

Occurrence: Tertiary; California.

**Sjögrenia** Felix, 1894, p. 99.**Sjögrenia crystallophora** Felix.1894 *Sjögrenia crystallophora* Felix, p. 93, pl. IX, f. 1a—d, 2a—b.Remarks: Possibly related to the *Aurantiaceae*.

Occurrence: Eocene (Sumgait Series); Caucasus (Baku).

**Staphylea** L.**Staphylea** sp.1926a *Staphylea*: Fietz, p. 418.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**Staubia** Felix, 1884, p. 28.**Staubia eriodendroides** Felix.1884 *Staubia eriodendroides* Felix, p. 29, pl. II, f. 2, 4—6, 8.1889 *Staubia eriodendroides* Felix: Staub, p. 190.1890 *Staubia eriodendroides* Felix: Kaiser, p. 25.Remarks: The genus *Staubia* is stated to be close to *Dombeyoxylon*, and *S. eriodendroides* to be intermediate between *Eriodendron* and *Pterospermum*. Originals in Min. Mus. Dresden.

Occurrence: Tertiary; Hungary.

**Stephanoxylon** Felix, 1882, p. 43.**Stephanoxylon dubium** Felix.1882 *Stephanoxylon dubium* Felix, p. 43.1890 *Stephanoxylon dubium* Felix: Kaiser, p. 36.

Remarks: Silicified wood of uncertain systematic position. Not figured. Original in Munich.

Occurrence: ? Tertiary; ? Cracow.

**Suevioxylon** Kräusel, 1928, p. 253.**Suevioxylon zonatum** Kräusel.1928 *Suevioxylon zonatum* Kräusel, p. 253, f. 5—8.

Remarks: The wood is unidentifiable and indeed is so poorly preserved that its reference to the Dicotyledones cannot be regarded as fully established.

Occurrence: Jurassic (Braunjura  $\beta$ ); Germany (Heubach).**Sumatroxylon** den Berger, 1923, p. 145.**Sumatroxylon mollii** (Kräusel) den Berger.1922 *Anacardioxylon mollii* Kräusel, p. 252, pl. II, f. 5; IV, f. 4, 5; V, f. 2—4; VI, f. 3, 6, 7; VII, f. 3—5.

1923 *Sumatroxylon mollii* (Kräusel) den Berger, p. 145.

1925 *Sumatroxylon mollii* (Kräusel): Kräusel, p. 340.

Remarks: Kräusel at first referred this wood to the *Anacardiaceae*, but afterwards accepted the neutral name suggested by den Berger, who compared it with the *Burseraceae*. The name *Dryoxylon* might well have been used.

Occurrence: Miocene; Sumatra.

### **Swietenioxylon** Hofmann, 1883, p. 105.

#### **Swietenioxylon sternbergense** Hofmann.

1883 *Swietenioxylon sternbergense* Hofmann, p. 105.

1890 *Swietenioxylon sternbergense* Hofmann: Kaiser, p. 25.

Remarks: *Meliaceae*. Said to resemble *Swietenia mahagoni*.

Occurrence: Upper Oligocene; Mecklenburg (Sternberg).

### **Taenioxylon** Felix, 1882, p. 64.

#### **Taenioxylon blanfordi** Felix.

1883a *Taenioxylon blanfordi* Felix, p. 13, pl. I, f. 5, 6.

1890 *Taenioxylon blanfordi* Felix: Kaiser, p. 37.

Occurrence: ? Tertiary; "Ost-Indien".

#### **Taenioxylon eperuoides** Felix.

1886 *Taenioxylon eperuoides* Felix, p. 491, pl. XII, f. 5, 6.

1890 *Taenioxylon eperuoides* Felix: Kaiser, p. 37.

Remarks: Compared with the living *Eperua decandra* (*Caesalpinaceae*). Originals in Min. Mus. Dresden.

Occurrence: ? Pliocene; Philippines (Valentia).

#### **Taenioxylon ingaeforme** Felix.

1862 *Taenioxylon ingaeforme* Felix, p. 79.

1883a *Taenioxylon ingaeforme* Felix: Felix, p. 12, pl. I, f. 7—9.

1890 *Taenioxylon ingaeforme* Felix: Kaiser, p. 37.

Remarks: Probably *Mimoseae*; resembles *Inga fastuosa*.

Occurrence: ? Tertiary; Brazil.

#### **Taenioxylon irregulare** Felix.

1882 *Taenioxylon irregulare* Felix, p. 65.

1883a *Taenioxylon irregulare* Felix: Felix, p. 11, pl. I, f. 1, 2.

1890 *Taenioxylon irregulare* Felix: Kaiser, p. 37.

Remarks: Systematic position uncertain.

Occurrence: Tertiary; Antigua.

#### **Taenioxylon multiradiatum** Felix.

1883a *Taenioxylon multiradiatum* Felix, p. 11, pl. I, f. 10, 11; II, f. 10.

1890 *Taenioxylon multiradiatum* Felix: Kaiser, p. 37.

1918 *Taenioxylon multiradiatum* Felix: Berry, p. 30, pls. XIV, XV.

Remarks: Probably *Papilionaceae*.

Occurrence: Tertiary; Antigua.

Oligocene; Canal Zone.

[*Taenioxylon pacificum* Crié.]

1889 *Taenioxylon pacificum* Crié, p. 90.

Remarks: *Nomen nudum*.

Occurrence: Pliocene; Molucca (Halmahera).

*Taenioxylon pannonicum* Felix.

1887a *Taenioxylon pannonicum* Felix, p. 145, pl. XXVII, f. 1, 2.

1889 *Taenioxylon pannonicum* Felix: Staub, p. 190.

1890 *Taenioxylon pannonicum* Felix: Kaiser, p. 37.

Remarks: Originals in Mus. Ungar. Geol. Reichsanst.

Occurrence: ? Tertiary; Hungary.

*Taenioxylon porosum* Felix.

1894 *Taenioxylon porosum* Felix, p. 103, pl. X, f. 3.

Remarks: Felix suggests that perhaps this wood ought to be put in *Sapotoxylon*.

Occurrence: Eocene (Sumgait Series); Caucasus (Apscheron).

*Taenioxylon varians* Felix.

1882 *Taenioxylon varians* Felix, p. 64.

1883a *Taenioxylon varians* Felix: Felix, p. 10, pl. I, f. 3, 4.

1884 *Taenioxylon varians* Felix: Vater, p. 852.

1890 *Taenioxylon varians* Felix: Kaiser, p. 37.

Remarks: Systematic position uncertain.

Occurrence: Lower Senonian; Germany (Harzburg).

Tertiary; Antigua.

*Taenioxylon* sp.

1884 *Taenioxylon* sp.: Vater, p. 852.

1890 *Taenioxylon* sp.: Kaiser, p. 38.

Remarks: Resembles *T. varians*.

Occurrence: Lower Senonian; Brunswick (Helmstedt).

*Tarrietioxylon* Kräusel, 1922, p. 259.

*Tarrietioxylon sumatrense* Kräusel.

1922 *Tarrietioxylon sumatrense* Kräusel, p. 259, pl. II, f. 4; IV, f. 2, 3, 6; VI, f. 4, 5, 9; text-fig. 23.

Remarks: Referred to the *Sterculiaceae* and compared with *Tarrietia*.

Occurrence: Tertiary; South Sumatra.

*Tchihatcheffites* Unger, 1866a, p. 324.

[= *Tchihatchewia* Unger, 1863, p. 516, preoccupied.]

*Tchihatcheffites byzantina* Unger.

1863 *Tchihatchewia byzantina* Unger in *Tchihatchef*, p. 516.

1866a *Tchihatcheffites byzantina* (Unger) Unger, p. 324, pl. XVII, f. 3, 4.

Remarks: Family unknown (Unger).

Occurrence: Tertiary; Thrace (Lake Derkos).

**Ternstroemiacinium** Felix, 1894, p. 100.

**Ternstroemiacinium euryoides** Felix.

1894 *Ternstroemiacinium euryoides* Felix, p. 99, pl. X, f. 4.

1911 *Ternstroemiacinium euryoides* Felix: Tuzson, p. 49.

1930 *Ternstroemiacinium euryoides* Felix: Schönfeld, p. 124.

Remarks: Compared with *Eurya latifolia*.

Occurrence: Eocene (Sumgait Series); Caucasus (Apscheron).

**Ternstroemiacinium kräuseli** (Schönfeld).

1930 *Ternstroemioxylon kräuseli* Schönfeld, p. 119, f. 10—18.

Remarks: Schönfeld gives no reason for substituting a new name for the perfectly adequate form-genus *Ternstroemiacinium* Felix.

Occurrence: Miocene; Hessen (Lauterbach am Vogelsberg).

[**Ternstroemioxylon** Schönfeld, 1930.]

Synonym of *Ternstroemiacinium* Felix.

**Tetranthera** Jacq.

**Tetranthera alnoides** Miq.

1911a *Tetranthera alnoides* Miq.: Schuster, p. 246, f. 2, 3.

Remarks: The identification should be accepted with reserve.

Occurrence: Pithecanthropus Beds; Java.

**Tilia** L.

**Tilia** sp.

1926a *Tilia*: Fietz, p. 419.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**Tilioxylon** Hofmann, 1929, p. 82.

**Tilioxylon** sp.

1928 *Tilia* sp.: Hofmann, p. 3, pl. 1, f. 2.

1929 *Tilioxylon* sp.: Hofmann, p. 82.

Occurrence: Pliocene or Pleistocene; Hungary (Csadberge).

[**Trochodendromagnolia** Zander.]

1923 *Trochodendromagnolia*: Zander, p. 40, 41, pl. III.

Remarks: The above name refers to some isolated tracheids obtained by macerating an Eocene lignite. No species is mentioned, and the name was apparently used to suggest a somewhat hypothetical intermediate form. It is not clear whether all the tracheids figured are supposed to have come from the same plant, and it seems very unlikely that such material could ever be definitely identified.

Occurrence: Eocene; Saxony (Geiseltal).

**Ulmium** Unger, 1842, p. 101.**Ulmium columbianum** (Penhallow) Nagelhard.1907a *Ulmus columbiana* Penhallow, p. 299, pl. VIII.1908 *Ulmus* "columbiensis" Penhallow: Penhallow, p. 93.1922 *Ulmium columbianum* (Penhallow) Nagelhard, p. 19.

Remarks: Penhallow states that he first regarded this wood as *Rhamnacinium*, but that a more critical examination showed it to be an *Ulmus* not readily assignable to a known type. Under the circumstances a more cautious generic reference seems desirable.

Occurrence: Oligocene; British Columbia (Midway).

**[Ulmium diluviale** Unger.]

Synonym of *Laurinium diluviale*, q. v.

**Ulmium hungaricum** (Lingelsheim).1917 *Ulmoxylon hungaricum* Lingelsheim, p. 561, f. 12, 13.

Remarks: Type in Mus. Geol. Reichsanst. Budapest.

Occurrence: Miocene; Hungary (Beocsin).

**Ulmium kleinii** (Tuzson).1909 *Celtitis kleinii* Tuzson, p. 376. (Nomen).1911 *Celtites kleinii* Tuzson, p. 50, pl. I, f. 3; text-fig. 22—25.

Occurrence: Tertiary (Schotter Beds); Hungary (Lake Balaton).

**Ulmium lapidarium** (Unger).1842 *Cottaites lapidarium* Unger, p. 102.1842a *Cottaites lapidarium* Unger: Unger, p. 176.1845 *Cottaites lapidarium* Unger: Unger, p. 265.1850 *Cottaites lapidarium* Unger: Unger, p. 526.1854 *Cottaites lapidarium* Unger: Unger, p. 182, pl. VII, f. 1—3.1879 *Ulmoxylon* sp.: Kaiser, p. 100.1883 *Ulmoxylon lapidarium* (Unger) Felix, p. 63.1890 *Ulmoxylon lapidarium* (Unger): Kaiser, p. 18.1908 *Ulmoxylon lapidarium* (Unger): Platen, p. 27.

Remarks: Kaiser (1879) described a silicified wood from Gleichenberg as *Ulmoxylon*, without giving a specific name. He showed that Unger's *Cottaites lapidarium* belonged to the *Ulmaceae* and not the *Leguminosae*, and stated that it was very probably synonymous with his *Ulmoxylon*.

Occurrence: Miocene; Styria (Gleichenberg).

**Ulmium lovisatoi** (Falqui).1906 *Ulmoxylon lovisatoi* Falqui, p. 16, pl. I, f. 4.

Remarks: Lingelsheim (1917, p. 563) doubts whether this wood has anything to do with *Ulmus*. See addendum, p. 90.

Occurrence: Miocene; Sardinia.

**Ulmium pliocenicum** Pampaloni.1904 *Ulmium pliocenicum* Pampaloni, p. 542, f. 4—6.

Occurrence: Pliocene; Piedmont (Ceresole d'Alba).

**Ulmium protoamericanum** (Penhallow) Nagelhard.1907a *Ulmus protoamericana* Penhallow, p. 298, pl. VII.1908 *Ulmus protoamericana* Penhallow: Penhallow, p. 94.1922 *Ulmium protoamericanum* (Penhallow) Nagelhard, p. 20.Remarks: Penhallow (1907b, p. 449) states that a wood close to *U. americana* occurs in the Pleistocene of Elmira, N. Y.

Occurrence: Oligocene; British Columbia (Kettle River).

**Ulmium protoracemosum** (Penhallow) Nagelhard.1907a *Ulmus protoracemosa* Penhallow, p. 297, pls. IV—VI.1907b *Ulmus protoracemosa* Penhallow: Penhallow, p. 450.1908 *Ulmus protoracemosa* Penhallow: Penhallow, p. 95.1922 *Ulmium protoracemosum* (Penhallow) Nagelhard, p. 20.Occurrence: Oligocene; British Columbia (Kettle River).  
Pleistocene; New York (Elmira).**Ulmium simrothi** (Platen).1908 *Ulmoxylon simrothi* Platen, p. 26, pl. I, f. 5, 6.

Occurrence: Pliocene; California (Calistoga).

? **Ulmium** sp.1888 *Ulmus*: Dawson, p. 33.

Remarks: No description or figure. Requires confirmation.

Occurrence: Upper Cretaceous (Fort Pierre Group); Western Canada (Head of Swift Current).

**[Ulmoxylon Kaiser, 1879.]**Synonym of **Ulmium**, q. v. for all species described  
under **Ulmoxylon**.See also *Ulmus* for **Ulmoxylon** sp.**Ulmus** sp.1926 *Ulmoxylon* sp.: Fietz, pp. 229, 236, pl. V, f. 9.1926a *Ulmus*: Fietz, p. 418.

Remarks: See discussion on nomenclature in the Introduction.

Occurrence: Pleistocene; Silesia and Czechoslovakia.

**[Ungerites Schleiden, 1855, p. 37.]****[Ungerites tropicus Schleiden.]**Synonym of **Ficoxylon tropicum**, q. v.**Vaccinium** L.**Vaccinium** sp.1914 *Vaccinium* sp.: Szafer, p. 349.

Occurrence: Pleistocene; Poland.

**[Vaticoxylon den Berger, 1927, p. 497.]**For woods of *Dipterocarpaceae* belonging to the *Vaticaeae* and probably the *Vateriae*. No fossil species mentioned.

**Viburnum L.****Viburnum ? sp.**

1926a *Viburnum* ? : Fietz, p. 420.

Remarks: Fietz draws attention to the close structural resemblance between the woods of *Viburnum* and *Cornus*.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**Viscum L.****Viscum album L.**

1926 *Viscum album* L.: Fietz, p. 233, pl. V, f. 3.

Remarks: On coniferous wood.

Occurrence: Pleistocene; Silesia.

**Vitis L.****Vitis sp.**

1926a *Vitis*: Fietz, p. 419.

Occurrence: Prehistoric (Loess); Czechoslovakia (Brno).

**? Vitis sp.**

1920 ? *Vitis* sp.: Kräusel, p. 457, pl. XXXIV, f. 5; XXXVIII, f. 8, 9; text-fig. 10, 11.

Occurrence: Miocene; Silesia (Oppeln).

[**Vitoxylon** Schuster, 1911, p. 541.]

Synonym of **Ampeloxylon**, q. v. for species described as **Vitoxylon**.

**Withamia** Unger, 1842, p. 102.

**Withamia stiriaca** Unger.

1842 *Withamia stiriaca* Unger, p. 102.

1842a *Withamia stiriaca* Unger: Unger, p. 177.

1845 *Withamia stiriaca* Unger: Unger, p. 261.

1850 *Withamia stiriaca* Unger: Unger, p. 522.

1890 *Withamia stiriaca* Unger: Kaiser, p. 38.

Occurrence: Tertiary; Styria (Nestelbach).

[**Woburnia** Stopes, 1912, p. 91.]

Remarks: I agree with Kräusel in sinking this genus in *Dipterocarpozylon*, just as *Kloedenia* has been sunk in *Quercinium*. Actually wood of the *Dipterocarpaceae* was first described as *Bredaea*. For *Woburnia porosa* Stopes, see *Dipterocarpozylon porosum*.

**Zittelia** Felix, 1882, p. 73.

**Zittelia elegans** Felix.

1882 *Zittelia elegans* Felix, p. 73, pl. I, f. 2.

1883a *Zittelia elegans* Felix: Felix, p. 14, pl. II, f. 1, 2.

1890 *Zittelia elegans* Felix: Kaiser, p. 33.

Remarks: Relationship uncertain, perhaps *Leguminosae*.

Occurrence: Tertiary; Antigua.

## Systematic List of Genera.

The families are arranged alphabetically. The numbers in brackets indicate the number of named species in each genus. Doubtful genera or species are sometimes mentioned under more than one family. Synonyms and nomina nuda are omitted entirely. Pleistocene woods and woods not specifically named are omitted from the total number of species. The attributions to families are by no means certain.

Aceraceae:	Acerinium (5), Acer sp.
Anacardiaceae:	Anacardioxylon (2), Rhodium (3).
Araliaceae:	Aralinium (4).
Betulaceae:	Alnoxyton (3), Betulinium (11), Carpinoxyton (3), Alnus sp., Betula sp., Carpinus sp., Corylus sp.
Burseraceae:	Sumatroxyton ? (1).
Capparidaceae:	Capparidoxyton (1).
Caprifoliaceae:	Viburnum sp.
Casuarinaceae:	Casuaroxyton (2).
Celastraceae:	Celastrinoxyton (1), Elaeodendroxyton (1), Euonyminium (1), Rohlfisia (1).
Combretaceae:	Combretacinium (1).
Cornaceae:	Cornoxyton (7).
Dipterocarpaceae:	Dipterocarpoxyton (11).
Ebenaceae:	Ebenoxyton (6).
Ericaceae:	Dryoxyton sambiense ?, Vaccinium sp.
Euphorbiaceae:	Euphorbioxyton (1), Paraphyllanthoxyton (1).
Fagaceae:	Fegonium (5), Nothofagoxyton (1), Quercinium (25), Fagus sp., Castanopsis sp., Quercus sp.
Hamamelidaceae:	Hamamelidoxyton (1), Liquidambaroxyton (2).
Hippocrateaceae:	Hippocrateoxyton (1).
Juglandaceae:	Juglandinium (6), Mirbellites ? (2).
Lauraceae:	Laurinium (27), Cinnamomum sp., Tetrathera alnoides ?.
Leguminosae:	Acacioxyton (3), Caesalpinioxyton (4), Cassioxyton (3), Cercidoxyton (1), Felixia (1), Fichtelites ? (1), Hauera americana ?, Mohlites ? (2), Palackya (1), Pterocarpus santalinus, Taenioxyton (8), Schleidenites (1), Zittella ? (1).

Loranthaceae:	<i>Viscum album</i> .
Magnoliaceae:	<i>Dryoxylon laxum</i> ?, <i>D. silvaticum</i> ?, <i>Rosthornia</i> ? (1).
Meliaceae:	<i>Swietenioxylon</i> (1).
Menispermaceae:	<i>Lillia</i> (1).
Moraceae:	<i>Ficoxylon</i> (4), <i>Ficus callosa</i> ?.
Myrtaceae:	<i>Eucalyptus</i> sp., <i>Eugenia cordata</i> .
Oleaceae:	<i>Ornoxylon</i> (1), <i>Fraxinus</i> sp.
Piperaceae:	? <i>Piper</i> sp., ? <i>Nicolia moresneti</i> .
Platanaceae:	<i>Plataninium</i> (13).
Proteaceae:	<i>Constantinium</i> ? (1), <i>Banksia</i> sp.
Rhamnaceae:	<i>Reynosia</i> (1), <i>Rhamnacinium</i> (6).
Rosaceae:	<i>Parinarioxylon</i> (1), <i>Pruninium</i> (1).
Rutaceae:	<i>Hauera americana</i> ?, <i>Klippsteinia</i> ? (1), <i>Sjögrenia</i> ? (1).
Sabiaceae:	<i>Sabiocaulis</i> (1).
Salicaceae:	<i>Salicinium</i> (7), <i>Populocaulis</i> ? (1), <i>Salix</i> sp., <i>Populus</i> sp., <i>Rosthornia</i> ? (1).
Santalaceae:	<i>Santalum</i> sp.
Sapindaceae:	<i>Djambioxylon</i> (1), <i>Fraasia</i> ? (1), <i>Sapindoxylon</i> (2), <i>Schmiedeliopsis</i> (1).
Sapotaceae:	<i>Sapotoxylon</i> (2), ? <i>Taenioxylon porosum</i> .
Saururaceae:	<i>Saururopsis</i> (1).
Simarubaceae:	<i>Simarubinium</i> (2).
Staphyleaceae:	<i>Staphylea</i> sp.
Sterculiaceae:	<i>Dombeyoxylon</i> (3), <i>Nicolia</i> (5), <i>Sillimannia</i> (1), <i>Staubia</i> (1), <i>Tarrietioxylon</i> (1), <i>Revesia wallichii</i> ?.
Ternstroemiaceae:	<i>Aptiana</i> (1), <i>Ruyschioxylon</i> (1), <i>Ternstroemiacinium</i> (2), <i>Helictoxylon schenki</i> ?.
Thymelaeaceae:	<i>Hauera americana</i> ?.
Tiliaceae:	<i>Tilioxylon</i> sp.
Ulmaceae:	<i>Ulmimum</i> (9), <i>Ulmus</i> sp.
Vitaceae:	<i>Ampeloxylon</i> (3), <i>Vitis</i> sp.

Incertae Sedis (Lianes): *Anomaloxylon* (1), *Helictoxylon* (7).

Incertae Sedis: *Aachenoxylon* (1), *Brongniartites* (1), *Bronnites* (4), *Cantia* (1), *Cottaites* (2), *Dryoxylon* (5), *Hauera* (3), *Hythia* (1), *Jugloxylon* (1), *Klippsteinia* (1), *Meyenites* (1), *Pataloxylon* (2), *Petzholdia* (3), *Piccolominites* (1), *Pritchardia* (1), *Sabulia* (1), *Stephanoxylon* (1), *Suevioxylon* (1), *Tchihatcheffites* (1), *Withamia* (1).

Total number of Generic Names (not including synonyms nor recent genera recorded from Pleistocene beds) . . . . . 95.

Total number of species (not including synonyms, nomina nuda, and Pleistocene woods) . . . . . 280.

## Geographical Index.

Synonyms, nomina nuda, dubious and unnamed woods have been omitted, and also some Pleistocene records of recent woods.

### Europe.

#### Germany.

*Acerinium borussicum*, *A. terrae-coeruleae*, *Alnoxylon inclusum*, *Ampeloxylon ampelopsoides*, *A. coheni*, *Betulinium geinitzii*, *B. lignitum*, *B. oligocaenicum*, *B. tenerum*, *B. sp.*, *Carpinoxylon compactum*, *C. sp.*, *Castanopsis sp.*, *Cornoxyylon* (6 spp.), *Dryoxylon laxum*, *D. sambiensis*, *Ebenoxylon tenax*, *Fegonium dryandrae-forme*, *F. lignitum*, *F. schenki*, *Hauera bornensis*, *Helictoxylon roemeri*, *H. speciosum*, *Juglandinium longiradiatum*, *J. triebellii*, *J. sp.*, *Laurinium algovicum*, *L. biseriatum*, *L. brunsvicense*, *L. haasi*, *L. perseoides*, *L. radiatum*, *L. tigurinum*, *L. triseriatum*, *L. sp.*, *Plataninium boreale*, *P. klebsii*, *P. megapolitanum*, *P. subaffine*, *Quercinium quercoides*?, *Q. sabulosum*, *Q. subgarryanum*, *Q. sp.*, *Rhamnacinium primaevum*, *Salicinium miocenicum*, *Suevioxylon*, *Swietenioxylon*, *Taenioxylon varians*, *T. sp.*, *Ternstroemiacinium krauseli*.

#### Holland.

*Cornoxyylon latiporosum*, *C. sp.*, *Laurinium nectandrioides*, *Salicinium varians*.

#### Belgium.

*Aachenoxylon*, *Nicolia moresneti*, *Salicinium bruxellense*.

#### England.

*Aptiana*, *Cantia*, *Dipterocarpoxyylon porosum*, *Hythia*, *Piper sp.*, *Sabulia*.

#### France.

*Ampeloxylon cineritarum*, *Betulinium parisiense*, *Hamamelidoxylon*, *Liquidambaroxylon lecointreae*, *Quercinium eocenicum*, *Salicinium biradiatum*.

**Italy.**

*Acerinium astianum*, *Alnoxydon* sp., *Anomaloxylon*, *Betulinium paronae*, *Juglandinium mediterraneum*, *J. zuriense*, *Laurinium xyloides*, L. sp., *Piccolominites*, *Quercinium astianum*, *Salicinum antiquum*, *S. messinianum*, *Ulmium lovisatoi*, *U. pliocenicum*.

**Austria.**

*Acerinium danubiale*, *Betulinium tenerum*, *Bronnites vindobonensis*, *Cottaites vasculosus*, *Fichtelites*, *Hauera stiriaca*, *Meyenites*, *Mohlites parenchymatosus*, *Plataninium vasculosum*, *Quercinium austriacum*, *Q. sabulosum*, *Rosthornia*, *Salicinum populinum*, *Sapotoxylon*, *Ulmium lapidarium*, *Withamia*.

**Hungary.**

*Alnoxydon vasculosum*, *Betulinium priscum*, *Carpinoxylon vasculosum*, *Cassioxydon zirkeli*, *Cottaites robustior*, *Dryoxylon silvaticum*, *Fraasia*, *Helictoxylon anomalum*, *Juglandinium mediterraneum*, *J. schenki*, *Laurinium antiquum*, L. aromaticum, *Lillia*, *Liquidambaroxylon speciosum*, *Mohlites cribrus*, *Plataninium porosum*, *P. regulare*, *Quercinium böckhianum*, *Q. compactum*, *Q. helictoxyloides*, *Q. leptotichum*, *Q. longiradiatum*, *Q. quercoides*, *Q. sabulosum*, *Q. vasculosum*, *Rhodium juglandinum*, *Schleidenites*, *Staubia*, *Taenioxydon pannonicum*, *Tilioxylon* sp., *Ulmium hungaricum*, *U. kleinii*.

**Poland.**

*Betulinium parisiense* ?, *B.* sp., *Dryoxylon nivium*, *Helictoxylon roemeri*, *Ornoxydon*, *Petzholdia polonica*, *Plataninium salinarum*, *P. vasculosum*, *Quercinium transiens*, *Stephanoxylon*.

**Czechoslovakia.**

*Betulinium stagnigenum*, *Ficoxydon tropicum*, *Laurinium diluviale*, *Quercinium sabulosum*.

**Roumania.**

*Bronnites transylvanicus*, *Quercinium transylvanicum*.

**Turkey.**

*Bronnites orientalis*, *Constantinium*, *Tchihatcheffites*.

**Greece.**

*Brongniartites*, *Ebenoxylon* sp., *Juglandinium mediterraneum*, *Mirbellites lesbis*.

**Russia.**

*Betulinium rossicum*, *Euonymium auerbachii*, *Quercinium montanum*, *Q. rossicum*, *Rhodium ungeri*.

**Azerbaijan.**

*Anacardioxylon uniradiatum*, *Combretacinium*, *Fegonium caucasicum*, *Plataninium porosum*, *P.* sp., *Rhamnacinium affine*, *Sjögrenia*, *Taenioxydon porosum*, *Ternstroemiacinium euryoides*.

**Asia.****Japan.**

*Alnoxydon yezoense*, *Betulium macclintockii*, *Fegonia hokkaidense*, *Jugloxydon*, *Populocaulis*, *Sabiocaulis*, *Saururopsis*.

**Burma.**

*Dipterocarpoxydon burmense*.

**Annam.**

*Dipterocarpoxydon annamense*.

**Philippines.**

*Helictoxydon luzonense*, *Palackya*, *Rhodium philippinense*, *Taenioxydon eperuoides*.

**East Indies.**

*Dipterocarpoxydon swedenborgii*, *Pterocarpus santalinus*, *Taenioxydon blanfordi*, *T. pacificum*.

**Sumatra.**

*Caesalpinioxydon palembangense*, *Dipterocarpoxydon djambiense*, *D. krausei*, *D. toberi*, *Djambioxydon*, *Ruyschioxydon*, *Sapindoxydon janssoni*, *Sumatroxydon*, *Tarrietioxydon*.

**Java.**

*Dipterocarpoxydon goepperti*, *D. javanense*, *D. moroides*, *D. spectabile*, *Helictoxydon schenki*, *Hippocrateoxydon javanicum*, *Pariarioxydon*, *Sapindoxydon klitzingi*.

**Australasia.****Australia.**

*Banksia* sp., *Caesalpinioxydon oweni*, *Eucalyptus* sp., *Pataloxydon* (2 spp.).

**New Guinea.**

*Laurinum meyeri*.

**New Caledonia.**

*Nicola caledonica*.

**Bismarck Archipelago.**

*Caesalpinioxydon oweni*.

**New Zealand.**

*Nicola zelandica*.

**Africa.****Rio d'Oro.**

*Caesalpinioxylon quirogae*, *Nicolia aegyptiaca*.

**Algeria.**

*Cassioxylon bartholomei*.

**Tunisia.**

*Acacioxylon antiquum*, *Ebenoxylon tunetanum*, *Ficoxylon cretaceum*, *Nicolia aegyptiaca*.

**Libyan Desert (see also Egypt).**

*Laurinium desioi*, *Nicolia aegyptiaca*, *N. giarabubensis*, *Rohlfsia*.

**Sirtica.**

*Ficoxylon cretaceum*, *Laurinium desioi*.

**Egypt.**

*Acacioxylon antiquum*, *A. vegae*, *Acerinium aegyptiacum*, *Caesalpinioxylon oweni*, *Capparidoxylon geinitzi*, *Celastrinoxylon affine*, *Dombeyoxylon aegyptiacum*, *Ebenoxylon ebenoides*, *Ficoxylon cretaceum*, *Laurinium primigenium*, *Nicolia aegyptiaca*.

**Sudan.**

*Caesalpinioxylon oweni*.

**Abyssinia.**

*Dombeyoxylon affine*, *Nicolia aegyptiaca*.

**Somaliland.**

*Nicolia aegyptiaca*.

**Madagascar.**

*Laurinium albiense*.

**South Africa.**

*Eugenia cordata*.

**North America.****Banksland.**

*Betulinium macclintockii*.

**Canada.**

*Plataninum* sp., *Ulmium columbianum*, *U. protoamericanum*, *U. protoracemosum*.

**United States.**

Anacardioxylon magniporosum, Aralinium (4 spp.) Carpinoxylon pfefferi, Cercidoxylon zirkeli, Dombeyoxylon jacksonensis, Dryoxylon americanum, Ebenoxylon boreale, E. speciosum, Elaeodendroxylon, Felixia, Ficoxylon, helictoxyloides, Helictoxylon wilcoxianum, Laurinium aromaticum, L. bakeri, L. brandonianum, L. branneri, L. californicum, L. eberi, L. lesquerianum, L. pulchrum, L. wilcoxianum, L. sp., Paraphyllanthoxylon, Plataninium crystallophorum, P. haydeni, P. knowltoni, P. pacificum, Pruninium, Quercinium abromeiti, Q. anomalum, Q. knowltoni, Q. lamarense, Q. lesquereuxi, Q. pliocaenicum, Q. solerederi, Q. wardi, Q. sp., Reynosia texana, Rhamnacinium porcupinianum, R. radiatum, R. texanum, R. triseriatum, Sillimannia, Simarubinium, Ulminium simrothi.

**Mexico.**

Acacioxylon tenax, Haueria americana.

**Guatemala.**

Laurinium guatemalense.

**Central America.**

Taenioxylon multiradiatum.

**Antigua.**

Anacardioxylon spondiaeforme, Bronnites antiguensis, Cassioxylon anomalum, Ebenoxylon diospyroides, Haueria americana, Helictoxylon tenerum, Petzholdia tropica, Schmiedeliopsis, Taenioxylon irregulare, T. multiradiatum, T. varians, Zittelia.

**West Indies.**

Petzholdia major, Pritchardia.

**South America.****Columbia.**

Euphorbioxylon.

**Brazil.**

Taenioxylon ingaeforme.

**Juan Fernandez.**

Santalum sp.

**Uruguay.**

Caesalpinioxylon nathorsti.

**Argentina.**

Betulinium rocae.

**Patagonia.**

*Laurinium uniseriatum*, *Nothofagoxylon scalariforme*.

**Chile.**

*Nothofagoxylon* sp.

**Tierra del Fuego.**

*Nothofagoxylon* sp.

**Antarctica.**

*Laurinium uniseriatum*, *Nothofagoxylon scalariforme*.

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## Addenda.

Since the completion of this work I have seen the following papers:

Chiarugi, A. 1929. La presenza in Sardegna di elementi paleoxilologici sahariani. *Nuovo Giorn. Bot. Ital.*, XXXVI, pp. 254—258.

Chiarugi, A. 1930. Contribuzione alla paleoxilologia dell'Africa. *Compte Rendu XV Int. Geol. Congress, Pretoria, II*, pp. 179—182, 1 map.

The first paper records the presence in the Miocene of Sardinia of *Dombeyoxylon aegyptiacum* and *Laurinium desioi*, and suggests that *Ulmium lovisatoi* Falqui is probably identical with the *Dombeyoxylon*. The second paper discusses geographical distribution and records the following (all *nomina nuda*) from Somaliland: *Dipterocarpoxyylon somalense*, *D. giubense*, *D. scebelianum*, *Sapindoxylon benadirense*.

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